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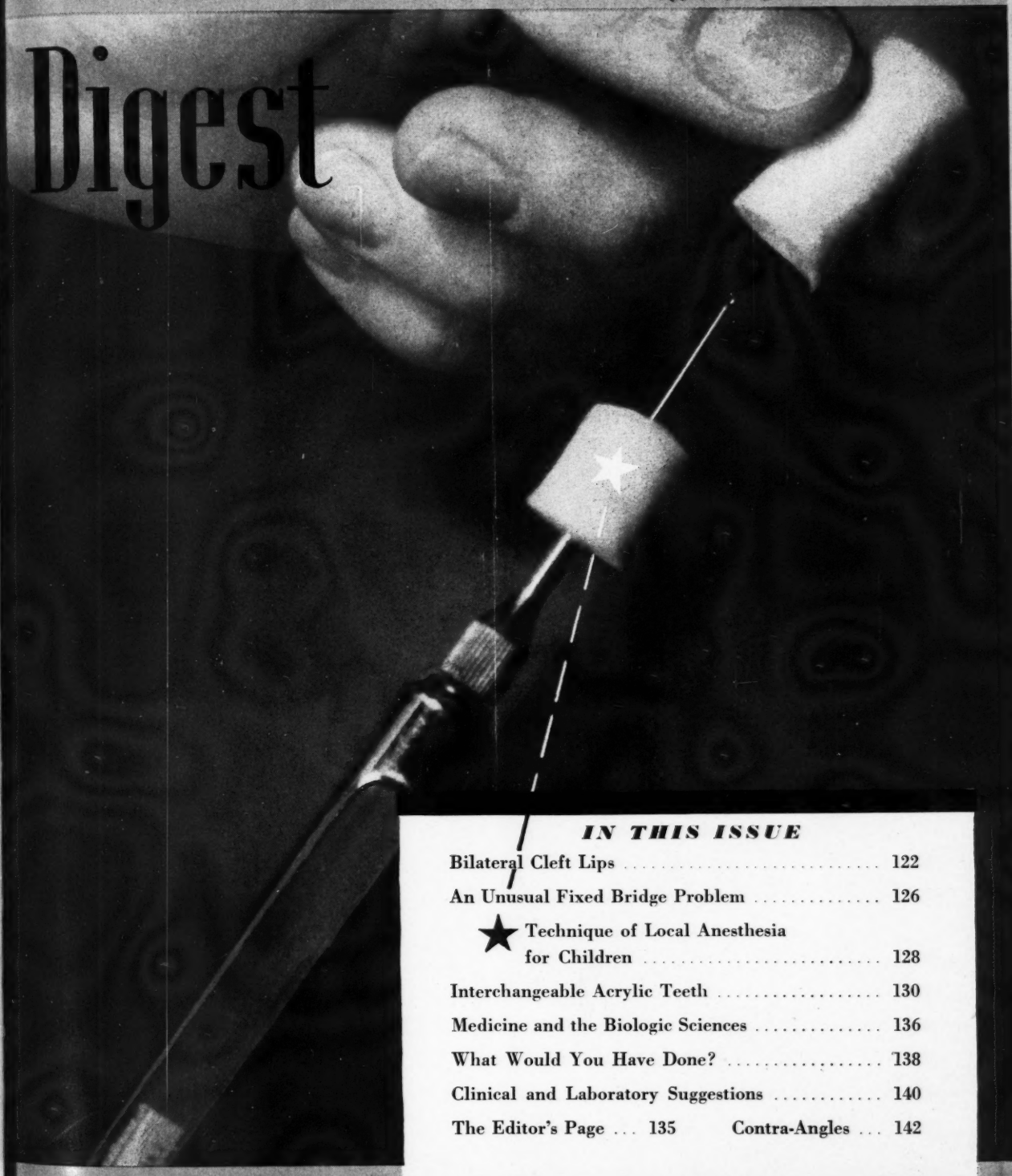

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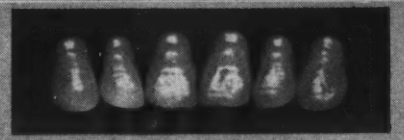

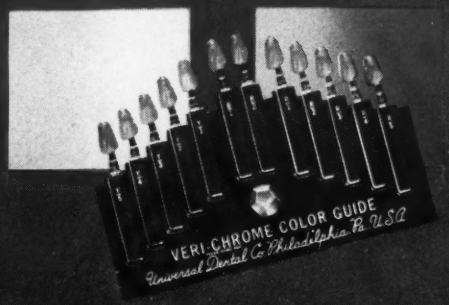

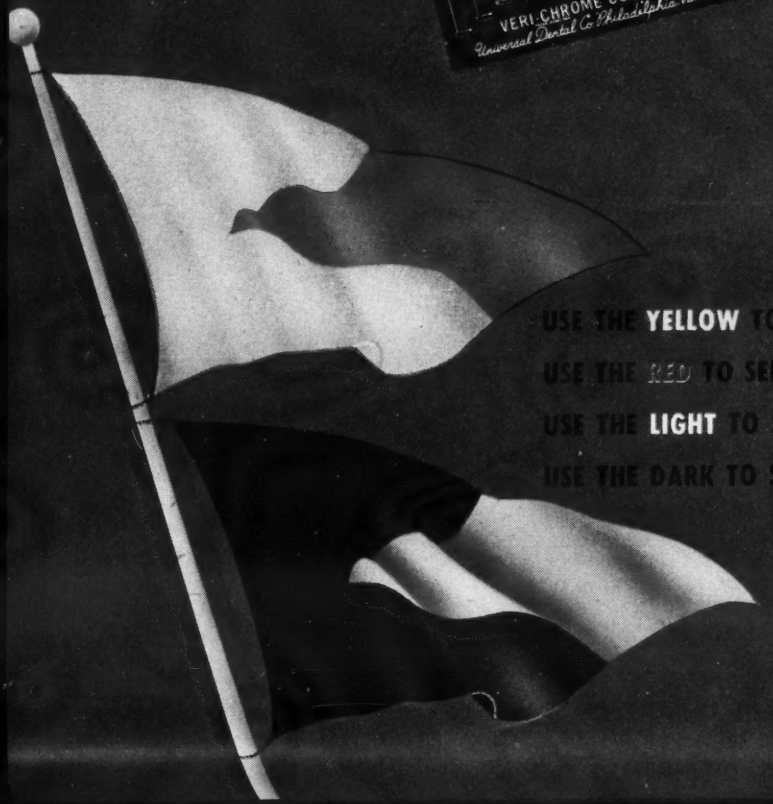

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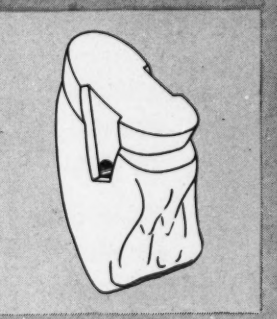

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About Our CONTRIBUTORS

Louis W. Schultz, D.D.S., M.D. (University of Illinois, College of Dentistry, 1920; College of Medicine, 1928) specializes in oral surgery. In addition, he is on the medical and dental teaching and research staffs of his alma mater. His contributions to the periodical literature over the past decade have included several which appeared in the Digest. The surgical procedure described in this issue is the culmination of many years' effort to perfect a technique which converts the bilateral cleft lip into a normal one by the conservation of all vermillion tissue. The title of this presentation is Bilateral Cleft lips. Doctor Schultz is a Fellow of the American College of Surgeons.

Gabriel Weiss, D.D.S. (The Thomas W. Evans Dental Institute, University of Pennsylvania, 1941) is a general practitioner. In An Unusual Fixed Bridge Problem he reports a case in which permanent lateral incisors have failed to erupt in the maxilla of a woman 23 years old.

Torello A. Del Papa, D.D.S. (Loyola University, School of Dentistry, 1941) is an instructor in operative dentistry and exodontics at the University of Tennessee, College of Dentistry. From 1942 until the fall of 1946 he was a member of the Army Dental Corps. A psychologically sound approach to local anesthesia for children is suggested by him.

Mischa Kroop, D.D.S. (Columbia University, School of Dental and Oral Surgery, 1924) is publishing with us this month his second article on fixed bridge pontics. The first concerned a method for combining gold and acrylic and appeared in the September 1946 issue. The second, Interchangeable Acrylic Pontics, describes an original technique for making acrylic pontics both retentive and replaceable.

In What Would You Have Done?, Jack F. Cathcart, D.D.S., presents his choice of two methods for solving a problem in mouth rehabilitation. Doctor Cathcart has had several years of teaching and research experience in crown and bridge prosthesis at the University of California, College of Dentistry, from which he graduated in 1926.

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BILATERAL CLEFT LIPS

LOUIS W. SCHULTZ, D.D.S., M.D., Chicago

DIGEST

Two major operative steps are necessary for the correction of most bilateral cleft lips:

1. Joining a detached intermaxillary segment to the maxillary bones on one or both sides.

2. Reconstructing the soft tissues of the lip.

Ideally, the first of these operations should be done when the child is one month old; the second, about a month later.

The technique presented here has been developed through experience with less satisfactory methods used in many cases of bilateral cleft lips over a period of twenty-five years.

THE BILATERAL cleft lip is the most interesting of cleft lips to correct because of the drastic change the correction makes in the facial expression. A bilateral cleft may be one of two types: (1) an *incomplete cleft* in which the intermaxillary segment of bone is in its normal relationship between the maxillary bones and the cleft is not complete in the soft tissues; (2) a *complete cleft* in which the intermaxillary segment of bone, detached from the two maxillary bones, is out on the tip of the nose attached to the septum and vomer, and the soft tissues of the lips are completely separated.

Deformities Present

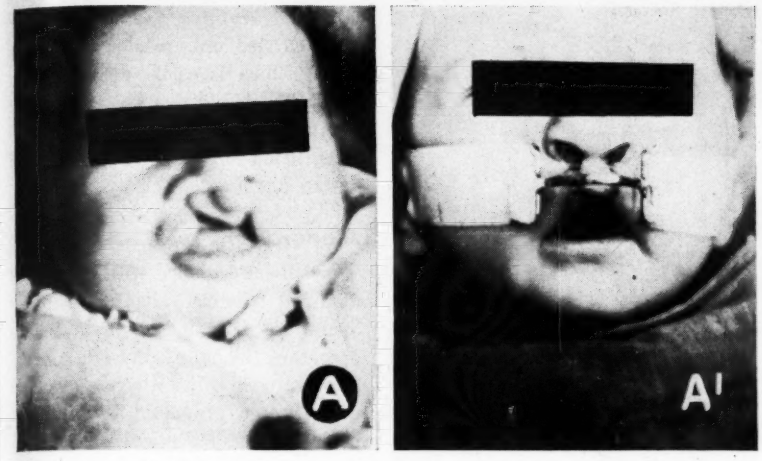
1. The bulbar tip of the nose often is depressed between widely spread alar cartilages.
2. The columella may be wanting.
3. The prolabium is small.
4. The intermaxillary segment of bone is well advanced on the end of the vomer in front of the maxillary segments.

All of these deformities are present and are due to lack of muscle balance and restraint. The soft tissues should be restored to normal as soon as possible, the intermaxillary segment first being reduced to its normal position. This reduction, done carefully when the baby is one month old, will not interfere with blood supply or growth and is the key to the future maxillary and labial development of the child. *The maxillary segments should not be molded because the clefts can be closed without this disturbance which is detrimental to the future development of the entire upper jaw.*

1. ***Bilateral cleft lip before (left) and after (above) reconstruction by author's technique.***

Reduction of Detached Intermaxillary Bone

Bilateral clefts are the most difficult clefts to correct with good results. As a rule, the intermaxillary bone is



2. ***Bilateral cleft lip before (A and A[1]) correction.***

detached from the maxillary bones on one or both sides, a deformity which should be corrected before the soft tissues are adjusted. The soft tissues, including the muscles, cannot force the intermaxillary bone to position between the maxillary segments and produce bony union of these parts:

An Inadequate Approach — The difficulties encountered in trying to move the intermaxillary bone by draping the soft tissues over it are:

1. The length of time involved, for it takes months to get the bone even partly in place.

2. The lip always has suture lines and excessive scar tissue in it because of the stretching.

3. More operations are necessary to get rid of the scar tissue.

4. These operations mean sacrificing tissue that should not be lost if a perfect lip is desired.

5. There never is a bony union of the maxillary and intermaxillary segments when this technique is used.

6. The correction takes so long that a speech defect results from the late closure.

7. There are fistulous tracts, often permanent, leading from the vestibule of the mouth to the floor of the nose.

8. The four central incisors in the intermaxillary bud are attached to the end of the vomer which is uncomfortable for the patient; furthermore, the patient cannot bite with these teeth because of the lack of bony attachment to the maxillary segments.

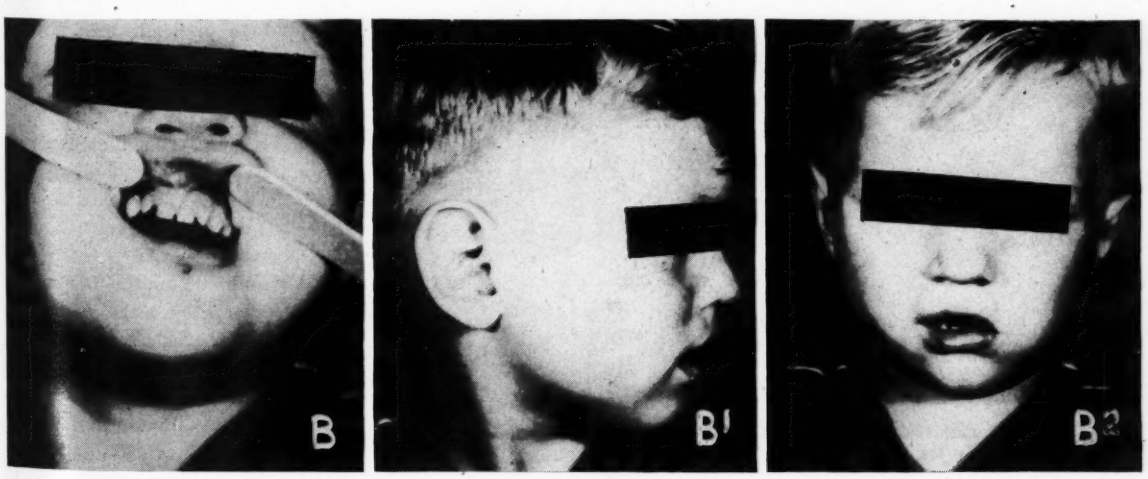
Two Satisfactory Methods — All these undesirable factors are avoided if the intermaxillary bone is brought to its normal position when the child is about one month old; then the child's jaw, including the intermaxillary segment, develops perfectly. The technique is simple but it has taken years to acquire. One cannot be too meticulous in doing the surgery to correct this type of deformity; the care necessary in handling the tissues cannot be overemphasized.

The intermaxillary segment can be mobilized for reduction in either of two ways:

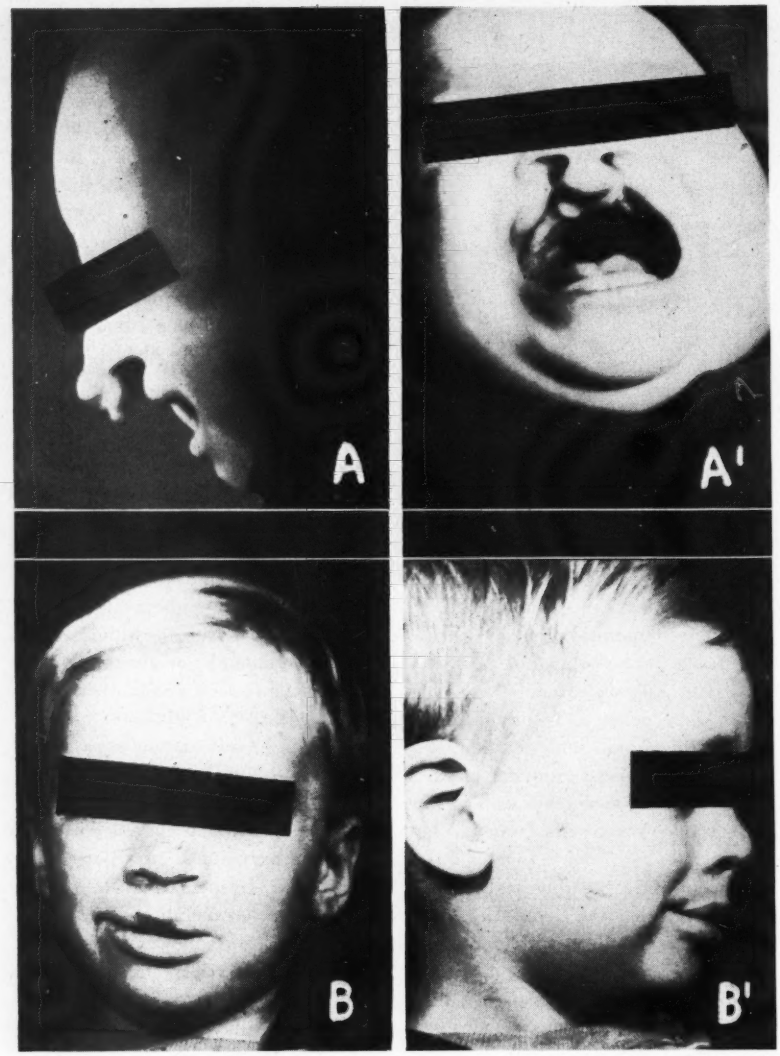
1. Making a submucous diagonal incision through the cartilaginous septum and then sliding one segment of the vomer over the other. (This technique should not always be used for it may produce a nasal obstruction later in life.)

2. Doing a submucous resection of a small V-shaped section of the septum.

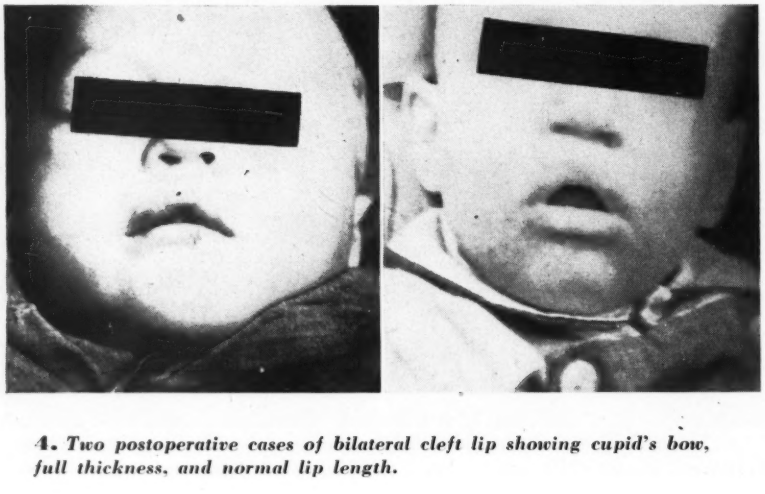
The contact points of the intermaxillary and maxillary segments are freshened by removing enough mucous membrane and periosteum to obtain bone-to-bone contact. The parts are fixed by passing a piece of number 000 nylon suture around the intermaxillary segment and passing mattress sutures of nylon number 5-0 between them.



3. ***Deep vestibule (B), normal profile (B[1]) and lip length (B[2]) after correction.***



3. *Bilateral cleft lip shown before (A and A¹) and after (B and B¹) correction.*



4. *Two postoperative cases of bilateral cleft lip showing cupid's bow, full thickness, and normal lip length.*

Either of these techniques, carefully carried out, results in a bony union which is easily demonstrated. The baby should rest for at least one month and then the lip should be constructed by the technique the author has devised.

Reconstruction of Lip

Not being satisfied with the results obtained in most bilateral cleft lip operations performed by various operators, including myself, the author searched diligently for a method which would produce a more nearly perfect effect. Having tried many of the methods described in the literature and obtaining, mostly, poor results, the author finally devised the technique herein described by which he can produce a much better lip in 98 per cent of cases.

Method—The incisions are made so that all vermillion tissue is saved. The normal vertical lip length is that which closely approximates the length of the skin of the bud of lip tissue overlying the intermaxillary bone. This small portion of skin and muscle develops to double or even treble its original size. Sometimes this growth occurs shortly after the tissue is placed in its normal position between the lateral segments; for then muscle tension is exerted by these segments on this highly important portion of lip.

The lateral lip segments are prepared by starting an incision high in the lateral wall of the nose and carrying it half way through the body of the lip to a predetermined point in the mucocutaneous junction. From this point the incision is carried medially and at the same depth through the lip. The lingual portion of this flap and one similarly prepared on the opposite side are joined later to form the lingual surface of the upper lip.

Technique—1. In the preparation of the central bud, the incision is started high in the medial aspect of the nose (B in Fig. 6) and carried down to a predetermined point in the mucocutaneous junction; then up through the mucous membrane to its attachment to the maxilla in the median line. All vermillion tissue, up

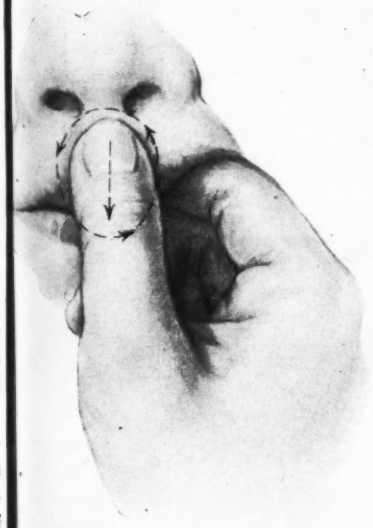
to its attachment to the gum, is conserved.

2. A similar incision is made on the opposite side of the intermaxillary bud to correspond with the one just made.

3. The central flap is dissected from the bone (C in Fig. 6) and so prepared that it fills perfectly the missing parts: (a) skin, (b) muscle and (c) mucous membrane, to give proper contour, thickness, length and width, and is turned up out of the way.

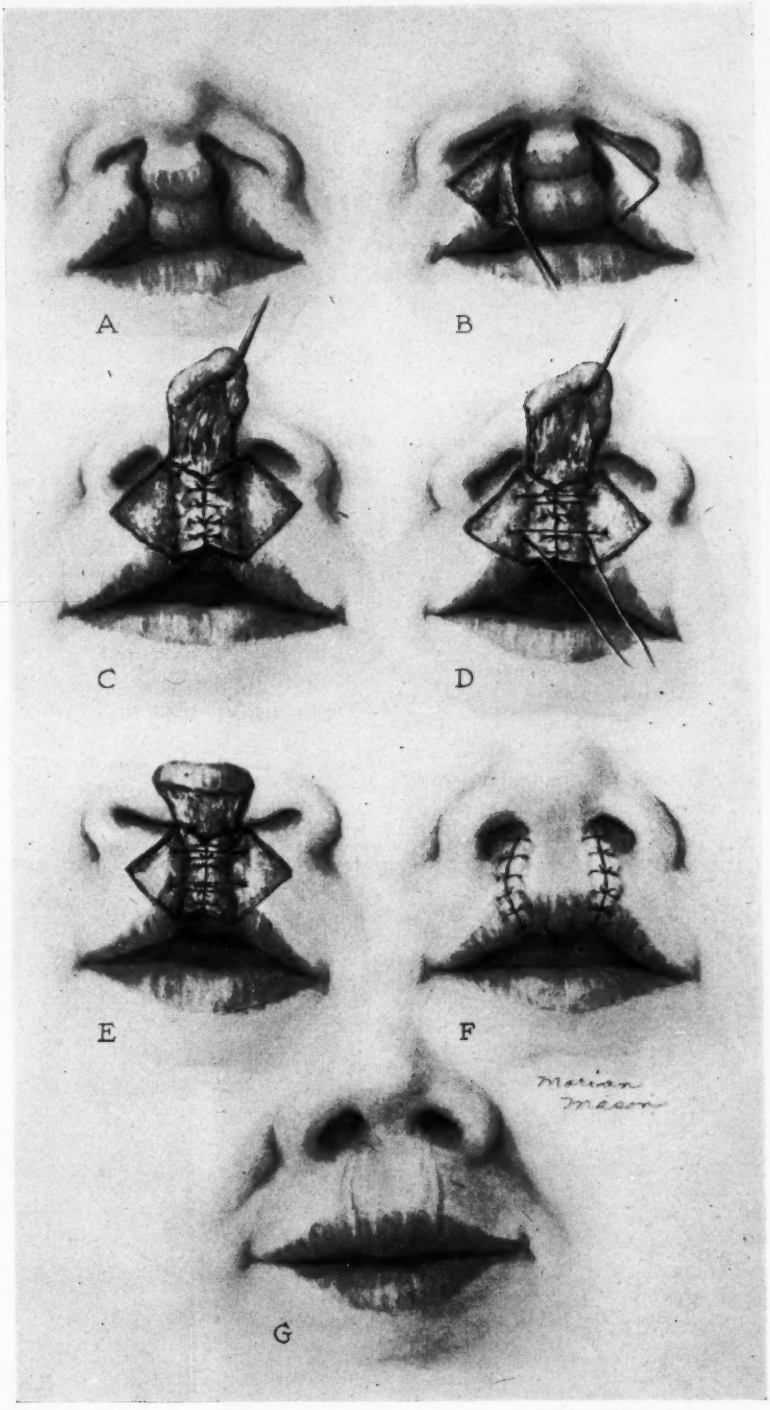
4. The lateral flaps containing the mucous membrane are turned lingually and united in the median line (C, D, and E in Fig. 6).

5. The central flap is brought down (F in Fig. 6) and united with the lateral flaps containing the skin—muscle to muscle, mucous membrane to mucous membrane, and skin to skin.



5. ***Massage technique to prevent linear contraction.***

Interrupted chromic 0000 catgut sutures are used for the muscles and interrupted 5-0 nylon sutures for the skin and mucous membrane. The nostrils should be closed with iodoform gauze impregnated with compound tincture of benzoin. The wound is to be kept clean and dry with saturated boric acid solution and cotton applicators when necessary. The Logan lip bow can be used to advantage to relieve tension on the suture line.



6. ***Technique for bilateral cleft lip reconstruction.***

Result—The result is an abundance of mucous membrane with which to fill the central space formed by the dissection of the median flap from the bone. Thus, a perfect lip results (G in Fig. 6) with full thickness, including the cupid's bow, deep vestibule, and normal contour.

25 *East Washington Street.*

An Unusual FIXED BRIDGE *Problem*

GABRIEL WEISS, D.D.S., Philadelphia

DIGEST

This report describes an improvement made in appearance and function by the use of fixed bridge replacements.

A YOUNG woman, aged twenty-three, presented a rather unusual problem for dental treatment: (1) Her maxillary deciduous cuspids were where her permanent cuspids should normally be, and (2) the latter were in the position normally occupied by the maxillary permanent lateral incisors (Figs. 1 and 2).

Clinical and Roentgenographic Findings

A complete examination, which included full mouth roentgenograms and accurate study models, revealed the following conditions:

1. Both maxillary permanent lateral incisors agenetically missing. (Questioning revealed that the patient's only sister also had agenetically missing permanent maxillary lateral incisors).

2. A carious-free mouth with no previous restorations in her permanent dentition.

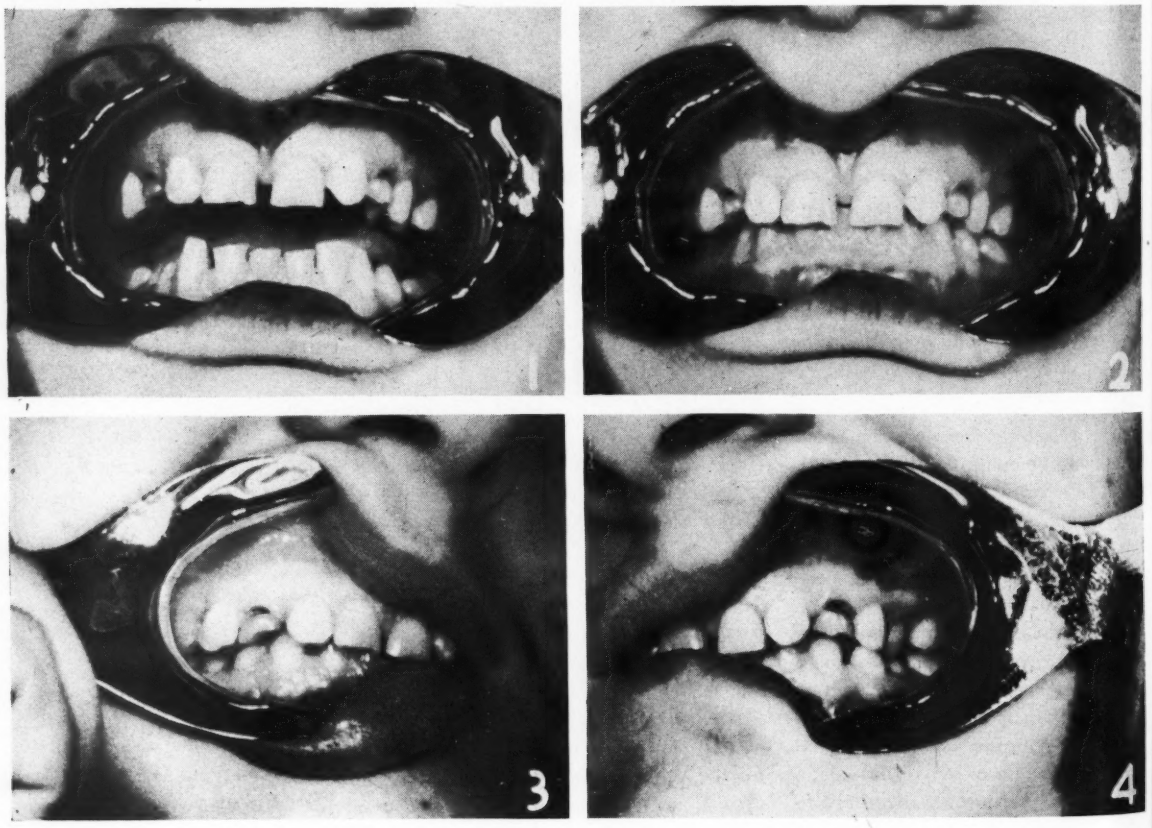
3. Very short, slightly crowded posterior teeth (Figs. 1, 2, 3, and 4).

4. Bite somewhat closed due to short posterior teeth with resultant uneven wear of both upper and lower anteriors (Figs. 1, 2, 3, and 4).

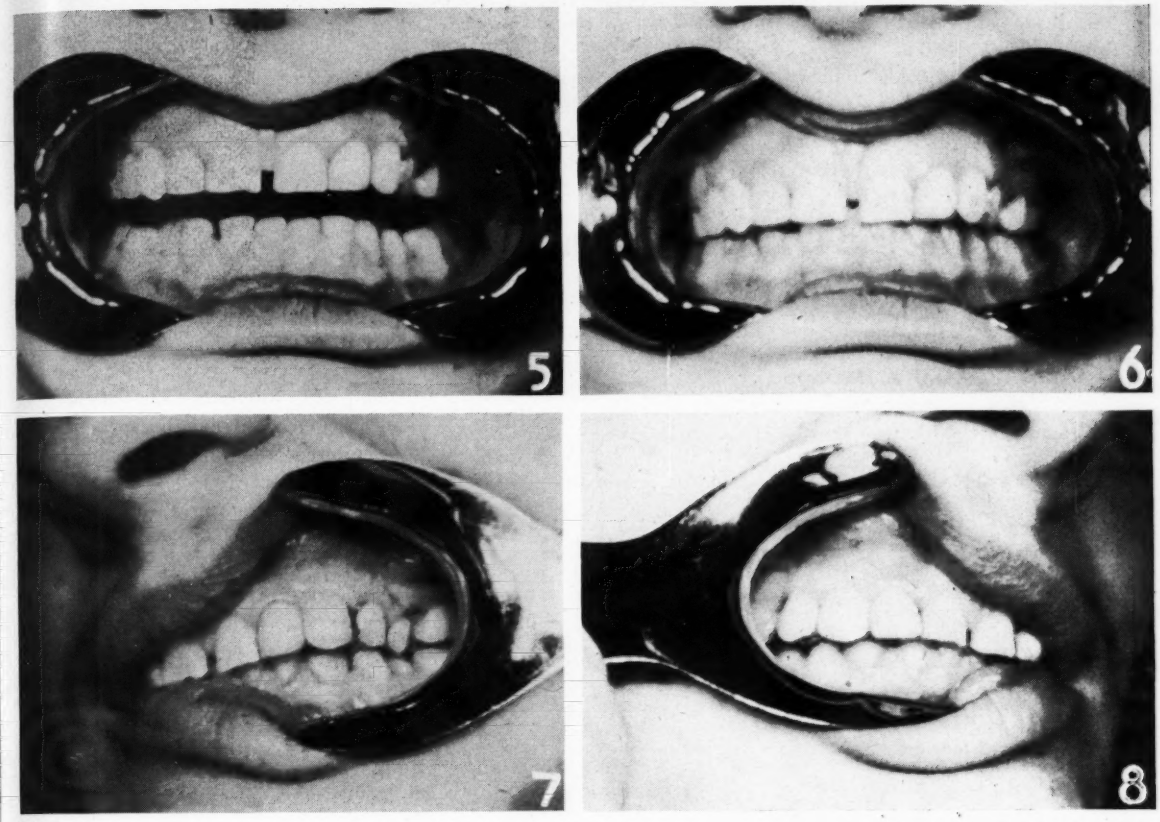
5. Slight distal occlusion on the right side.

6. Maxillary deciduous cuspids badly eroded and worn, with resultant elongation of the permanent mandibular cuspids (Fig. 1).

7. Partial resorption of roots of



Views of mouth one month before treatment. Deciduous cuspids are where permanent cuspids should be.



Views of mouth one month after treatment.

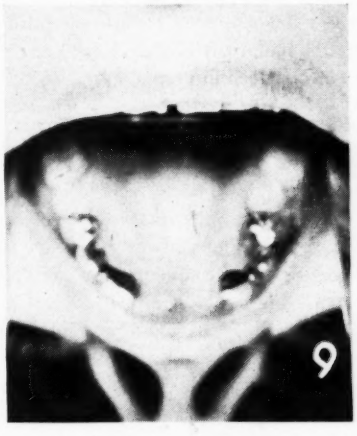
the maxillary deciduous cuspids.

8. Permanent maxillary cuspids in position normally occupied by the permanent laterals.

Treatment Plan

It was recommended that the patient have an orthodontist examine her and suggest proper orthodontic treatment. She refused this advice because of the time such treatment would involve, preferring something to be done in as short a time as possible to improve her appearance; hence, the following plan of treatment was carried out:

1. To clear the bite, it was necessary to reduce the height of the mandibular cuspids, but because this procedure would expose the dentine, these teeth were prepared for cast gold crowns with acrylic veneers. A typical shoulder was prepared on the labial surface and faded out mesially and distally into a shoulderless lingual preparation. This type of restoration was both strong and esthetic (Fig. 5).



Occlusal view of maxillary teeth with fixed bridges in position.

2. The maxillary permanent cuspids were likewise prepared for cast gold crowns with acrylic veneers; but these teeth were reduced more than the mandibular cuspids in order to change their appearance with the finished crown to resemble lateral incisors (Figs. 5, 6, 7, and 8).

3. The maxillary first bicuspids were prepared for typical slice lock, three-quarter veneer crowns.

4. In order to have strong, yet esthetic pontics, porcelain interchangeable facings with soldered backings were used. This step permitted clearing the bite in lateral excursion (Figs. 7, 8, and 9).

5. After the completion of both maxillary replacements, the deciduous cuspids were extracted and the fixed bridges inserted as immediate replacements.

6. Judicious grinding was done to improve the appearance of the lower incisors (Fig. 5).

Result

After a year of observation, I found this patient's mouth to be in the same condition as when treatment was completed. The final result was satisfactory from both a functional and an esthetic point of view.

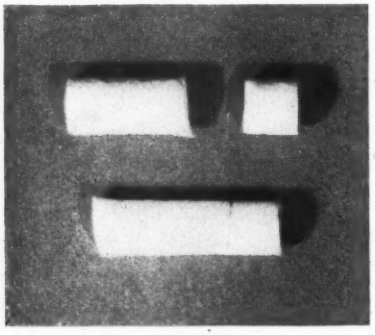
200 *South 46th Street.*

Technique of LOCAL ANESTHESIA *for Children*

T. A. DEL PAPA, D.D.S., Memphis

DIGEST

An aspect of dental treatment disturbing to children is the appearance of instruments with which they associate exaggerated ideas of pain. One psychologic approach to this problem in local anesthesia is the concealment of the needle by a cotton roll which serves as a sheath. Other seemingly insignificant but actually important and practical details in administering local anesthesia with a minimum of discomfort to the child patient are set down here.



1. *Segmented cotton roll.*

NO DETAIL is ever too insignificant to consider as an aid in making anesthesia in children's dentistry an easier task. Cavity preparation in deciduous teeth is painful to the child and often, because of his apprehension, exaggeratedly so. It is necessary in a large percentage of cases to use not only local infiltration and conduction analgesia but a psychologic approach to lessen the *idea* of pain.

In the maxilla, it is generally advisable to use local infiltration of both the lingual and buccal aspects of the teeth. In the mandible, local infiltration is used while operating on the lower anterior teeth; while operating on the molars, it is necessary to resort to block techniques.

Pre-Injection Procedure

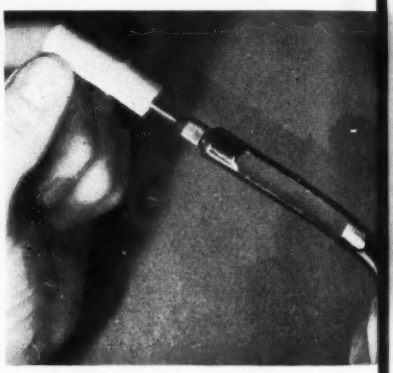
1. An important step prior to insertion of the needle is the use of a reliable and practical topical anesthetic which is sufficiently effective to produce surface analgesia as well as to ease the patient's mind.

a) Press the end of a segmented cotton roll (Fig. 1), moistened with the topical anesthetic, over the area intended for insertion of the needle (Figs. 5 and 6).

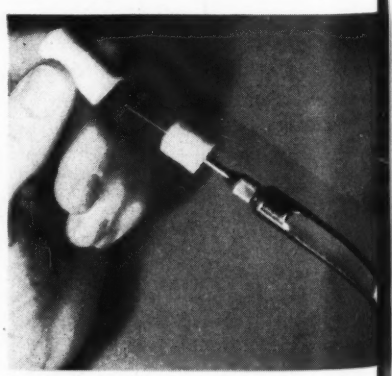
b) Allow sufficient time for the topical anesthetic to reach its maximum effect.

2. Warn the patient beforehand of the sensation he will experience after the solution has been injected. He should be told that the gums, teeth, lips and tongue will feel as if they are "asleep." Also, forewarn him of the tingling sensation on the side of the tongue. (The purpose of the warning is to discourage the patient from biting his tongue, cheeks or lips as children often do under these circumstances.)

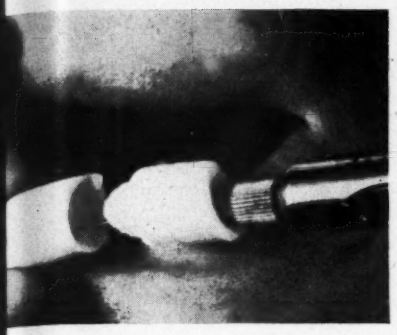
3. The following clinical suggestion will prove to be a good method of making the anesthetic needle inconspicuous in infiltration or conduction anesthesia. The simple steps listed will reduce the fear engendered by the sight of the syringe to a minimum and create the proper mental and



2. *Needle sheathed in segmented cotton roll.*



3. *Forward segment of roll removed from needle.*



4. Just prior to the removal of the first portion of the cotton roll, one end of it is moistened with topical anesthetic solution.

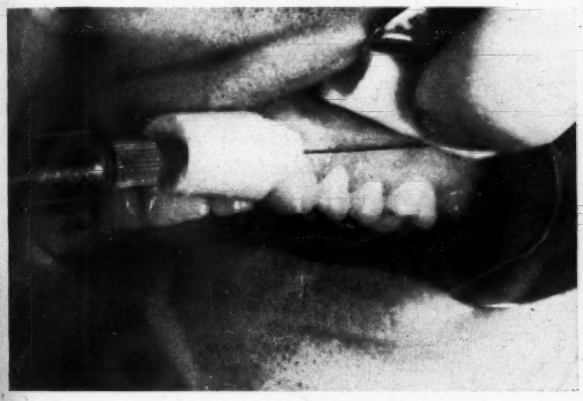
roll will encourage him to accept the next step.

c) It is also an advantage, in gaining the confidence and cooperation of the patient prior to the use of the topical anesthetic agent, to touch the child's hand lightly with a pellet of cotton and to tell him that the same thing must be done against his gum in order "to put it to sleep."

4. Another cotton roll is put in the patient's mouth around and near the area where the topical anesthetic is to be applied. This serves the purpose of keeping the area dry and, at the same time, of absorbing any extra flow of the topical anesthetic agent away from the area to be anesthetized.

5. A few drops of the anesthetic solution should always be forced into the cotton roll in order to eliminate the possibility of introducing air bubbles into the tissues.

6. It is well to remember that this solution should possess a temperature close to that of the body.



5. The forward portion of the segmented sterile cotton roll is removed with the same thumb and forefinger (of the left hand) that are used to retract the lip or cheek. This step is performed outside the patient's field of vision.

6. The removed cotton roll segment is held with the index finger over the site of injection. Pressure is applied to the part of the segment that was moistened with the topical anesthetic solution. This segment also removes and keeps away all surface mucus and keeps the area dry and free from contamination before the injection is given.

physical relaxation.

a) A segmented sterile cotton roll is used (Figs. 2 and 3). Figure 2 shows how the hypodermic syringe will appear to the patient. The segmented cotton roll serves as a sheath and makes the needle inconspicuous. The hypodermic syringe is placed on the operating tray in such a way that only the cotton roll is in view of the patient.

b) Next the patient is given another cotton roll to hold in his hands for inspection and curious observation. His manipulation of the

Technique of Injection

1. The injection should be made with a sharp needle, the bevel of which is toward the bone.

2. The solution should be injected slowly in order to eliminate distention of the tissues and to allow sufficient time for the anesthetic effect. Introducing the anesthetic solution rapidly into the tissues will almost always result in dilation of the tissues and pain to the patient both during injection and postoperatively.

After completing the injection, the forward portion of the cotton roll should be replaced on the needle with the thumb and forefinger and returned to the operating tray in view of the patient.

After completing the dental operation, it is important to tell the patient how much longer he will experience the effects of anesthesia.

Comments

We should do our utmost in administering local anesthesia to children to cause them, if possible, to recall their experience with the dentist as a pleasant one. The smallest details must be considered important.

Besides making the needle inconspicuous, the sterile segmented cotton-roll technique has the added virtue of providing a sterile needle, one of the basic essentials in the administration of local anesthetics.

718 *Union Avenue.*

Interchangeable ACRYLIC TEETH

MISCHA KROOP, D.D.S., Brooklyn

DIGEST

A technique is described here for achieving the retention of acrylic pontics in fixed bridges in such a way that the pontic can be removed and replaced if it breaks. The purpose of adopting such a procedure is to avoid having to discard a bridge and construct another if an acrylic pontic fractures.

Only the gold backings of the individual acrylic pontics are processed to the bridge casting. The pontics are cemented to the gold backings. Retention is secured by means of boxings and dovetailed slots in the pontic which render it less breakable. If replacement becomes necessary, however, the pontic can be removed from its backing with a bur and a new pontic substituted without destroying the bridge.

IN FIXED bridge prosthesis, acrylic pontics are fabricated by processing the material directly to a bar or similar metal frame which is soldered to the abutments. When an acrylic pontic is fractured, the fixed bridge containing it has to be removed from the abutment teeth; it is impossible to replace the fractured tooth *in situ* while the bridge remains cemented to the abutment teeth. Reconstruction of the bridge then means extra work and expense and discomfort to the patient.

If the same fixed bridge were to be constructed with replaceable (interchangeable) acrylic pontics, the broken acrylic tooth could be removed with a bur while the bridge remained cemented to the abutment teeth. A replacement tooth of the same shade and mold could then be adapted and cemented in place without destroying the basic unity of the bridge. I have devised and perfected an interchangeable tooth which I have used with substantial success for a considerable time in my own practice and feel certain that the results of my experience will prove of value to other dentists.

Advantages

The interchangeable acrylic pontic possesses all the qualities of an ideal tooth for use in fixed bridge prosthesis; namely:

1. Correct anatomic form.

2. Sturdiness sufficient to resist the normal occlusal stresses set up during the process of mastication.

3. Tissue tolerance: The gingival tissue in direct contact with the acrylic does not normally become inflamed nor is there any proliferation of the superficial layer of epithelial cells of the gingiva.

4. Good hygiene: Because of the factor of tissue tolerance, the patient is able more easily to maintain the bridge in a hygienic condition.

5. Esthetics: There is perfect harmony of the acrylic teeth with the natural teeth of the mouth. The absence of gold on the occlusal surfaces of the mandibular bicuspid and molar acrylic pontics renders them pleasing to the eye when the oral cavity is exposed to view in the normal course of talking, smiling, or laughing.

6. Interchangeability: If the acrylic pontic fractures, another can be substituted in its stead without destroying the original bridge.

7. Versatility: The acrylic pontic affords almost unlimited opportunities for use as both maxillary and mandibular anteriors, bicuspids, and molars.

Procedure for Acrylic Bridge

Careful planning of fixed dental restorations is, of course, essential.

The Case—1. Roentgenographic examination of the abutment teeth should first be made, always, to ascertain that these teeth can safely carry the added burden of the pontics.

2. The abutments are fitted and adapted to the abutment teeth in the mouth.

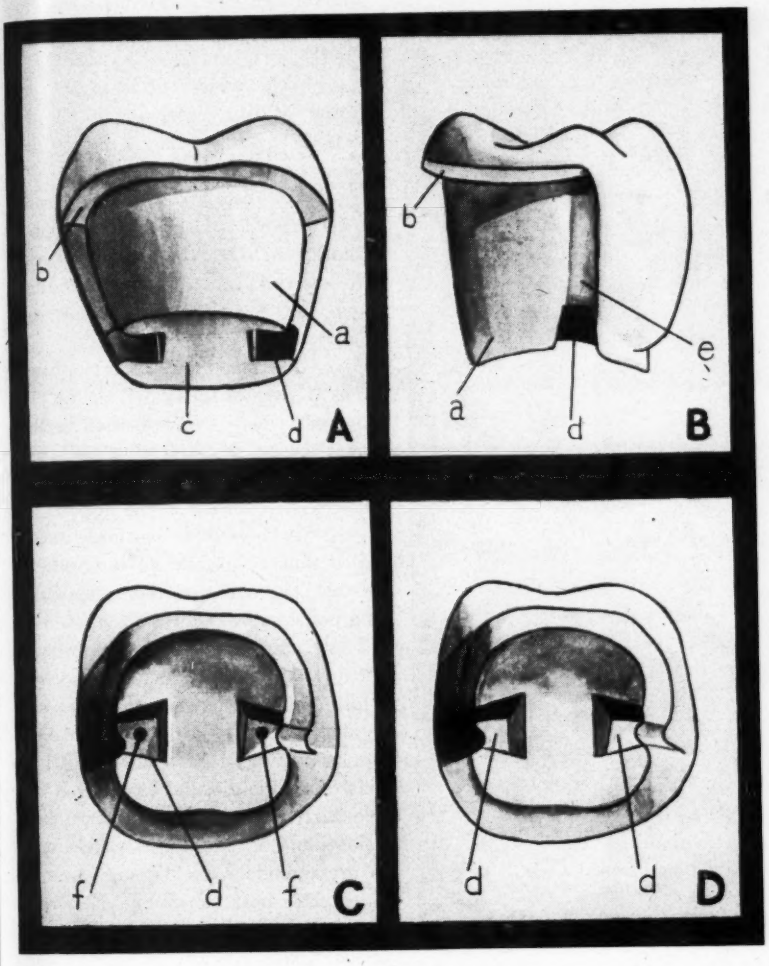
3. Marginal adaptation and proximal and occlusal contact are checked.

4. When these are found satisfactory, a wax bite is taken and then a plaster impression.

5. The castings are removed from the abutment teeth and carefully placed in the corresponding seats in the impression where they are se-

A. *Gingivolingual view of molar tooth: (a) lingual boxing; (b) shoulder; (c) gingival surface; (d) dovetailed slot.*

B. *Distal view of molar: (b) shoulder; (a) mesial boxing; (d) dovetailed slot; (e) longitudinal shallow groove.*



C. *Gingival view of molar showing post holes: (d) dovetailed slot; (f) holes for corrugated post.*

D. *Gingival view of molar: (d) dovetailed slot.*

cured with wax to render them immovable.

6. For more accurate results, it is advisable to take a plaster impression of occluding teeth.

7. The shade of adjacent teeth is matched.

8. The abutment teeth are protected against possible thermal shock and occlusal shifting.

The patient may then be dismissed.

The plaster impressions are well soaped and then soaked in water to replace the moisture lost during the process of crystallization. The first impression is poured in a heat-resisting material, the occluding one in stone. When set, the impressions are separated and the models are mounted on an articulator, the wax bite being used as a guide.

Acrylic Pontics—The case is now ready for the preparation of the acrylic pontics.

1. Lubrication should be applied to the edentulous span, as well as the abutments, and the antagonizing occlusal surfaces of the model.

2. Softened ivory wax is next pressed into the edentulous space.

3. The wax is carved to correct anatomic tooth form, perfect occlusion, and approximal contact. (It is best to carve the wax pontics with sloping lingual, mesial, and distal surfaces occlusogingivally. Diminished tooth size as well as exaggerated interproximal spaces for natural cleansing are thus ensured.)

4. The wax pontics are then carefully removed from the model, invested, packed with a good acrylic material, and accurately processed.

5. The resultant acrylic pontics should then be finished, polished, and alined in the edentulous space on the model.

6. Shade, occlusion, gingival relation, and approximal contact are checked next.

7. When these are found to be satisfactory, a plaster alinement matrix is run up.

The individual acrylic pontic is now ready for the preparation of its retentive feature.

Technique for Retentive Device

In Posterior Pontics—1. Boxing: The formation of a boxing is the initial step in making the individual bicuspid or molar pontic retentive.

a) A groove is cut to the depth of one-half millimeter transversely from the mesiobuccal to the distobuccal margins, across the lingual surface, at about one and one-half millimeters below the linguoclusal marginal ridge. (Care must be taken to terminate this groove before it reaches the buccal surface of the pontic.)

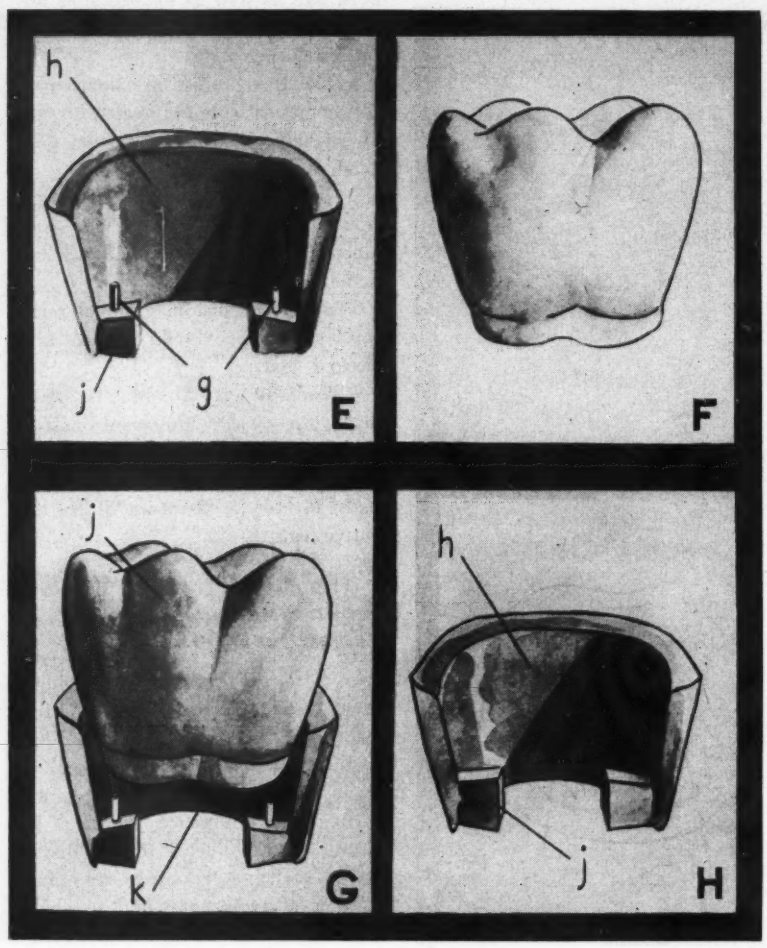
b) From the termination of this first groove on the mesial and distal sides, another groove is cut occlusogingivally. The depth of this latter groove should become shallower as it reaches the gingiva (c in Fig. A).

c) With suitable instruments (burs and chisels) the area enclosed by these grooves is cut away, down to the depth of the original cut.

A distinct shoulder is thus formed (b in Fig. A) below the linguoclusal marginal ridge, running mesiodistally and occlusogingivally. The prominence of this shoulder gradually disappears as it reaches the gingiva and the area enclosed by it assumes the form of a boxing (a in Fig. A) with

E. *Inner view of gold backing for short bite teeth, showing reinforcing posts: (g) reinforcing posts; (h) inner surface of gold backing; (i) dovetailed blocks.*

F. *Buccal view of molar pontic.*



G. *Buccal view of pontic assembly showing relationship of pontic to backing: (j) buccal view of gold backing for short bite teeth; (k) inner view of gold backing for short bite teeth.*

H. *Inner view of gold backing: (h) inner surface of gold backing; (i) dovetailed blocks.*

sloping or straight walls occlusogingivally which conform to the natural outline of the tooth.

d) The shoulder is now beveled, and the entire boxed surface is smoothed and polished.

e) At this stage, a longitudinal, shallow, rounded groove is prepared on the mesial and the distal sides of the pontic (e in Fig. B), running occlusogingivally in line with and at the shoulder. This groove serves to guide the backing to its correct position on the pontic.

2. Dovetailed Slot: The final step in the preparation of the retentive device of the individual pontic is the cutting of a dovetailed slot on the gingivodistal and gingivomesial sides of the pontic (d in Figs. A, B, C, and D).

a) The wider cut is in the direction of the center of the tooth, while the narrower one is toward the mesial or distal sides.

b) The initial depth of the slot at its origin on the mesiolingual and distolingual sides should be between two and three millimeters, depending upon the occlusogingival height of the pontic.

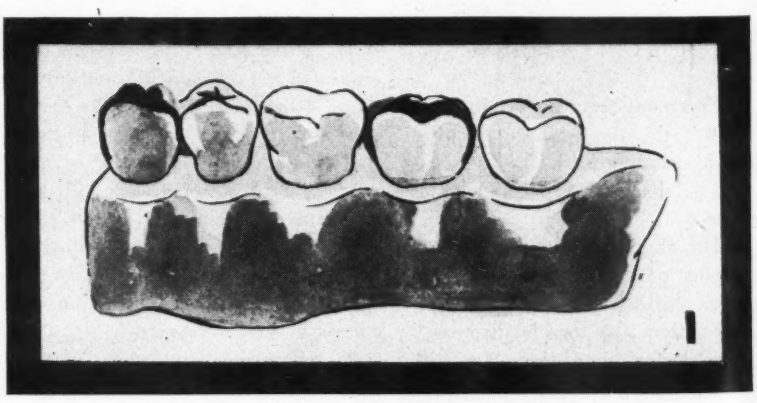
c) The slot should become deeper as it reaches the wider cut of the dovetail, where it is one-half millimeter deeper at its termination. This graduated depth of the slot imparts additional retention to the pontic.

d) It is essential that these dovetailed slots be parallel to each other.

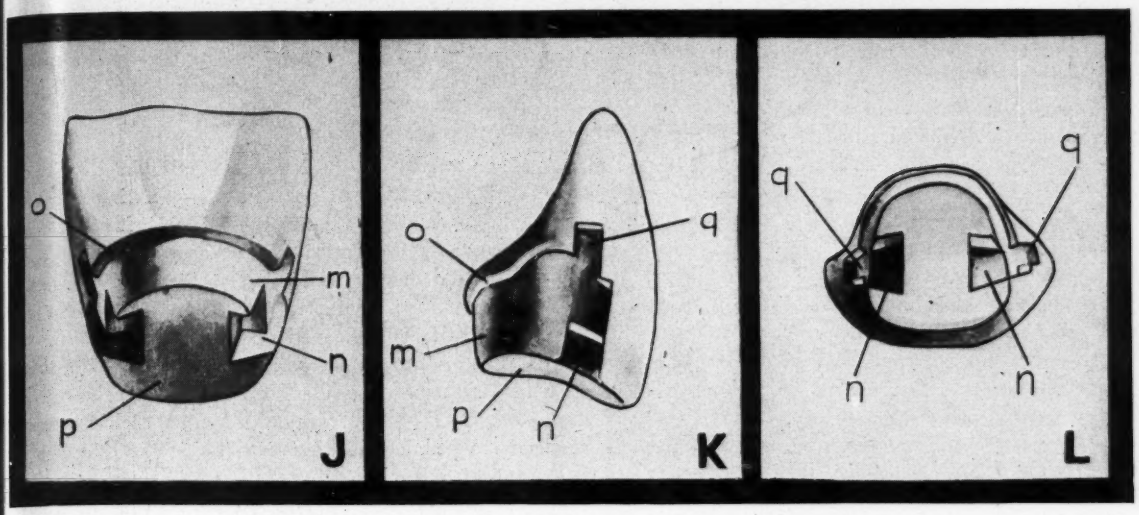
e) The slots are then smoothed and polished.

In the case of short bite teeth, where the dovetailed slot cannot be cut deep, additional retention may be obtained by drilling a hole in the center of the slot (f in Fig. C) parallel to the long axis of the pontic and to a depth of one-thirty-second of an inch. This hole should have a diameter sufficient to accommodate an 18-gauge corrugated wire post (g in Fig. E). The extra retention so provided helps prevent dislodgement of the pontic during the process of mastication.

In Anterior Pontics—1. Boxing: The retentive design for anterior pon-



I. *Occlusobuccal view of completed bridge in position showing the natural aspect of bicuspid and molar acrylic pontics.*



J. ***Linguogingival view of an upper central tooth: (m) lingual boxing; (n) dovetail slot; (o) shoulder; (p) gingival surface.***

K. ***Mesial view of an upper central tooth: (q) extension slot.***

L. ***Gingival view of an upper central tooth: (n) dovetail; (q) extension slot.***

tics differs somewhat from that for posteriors, since the lingual surface offers little space for a good-sized boxing.

a) In order to compensate for the lack of space, a deeper groove is cut a little above the cingulum and across the lingual surface from mesial to distal (Fig. J).

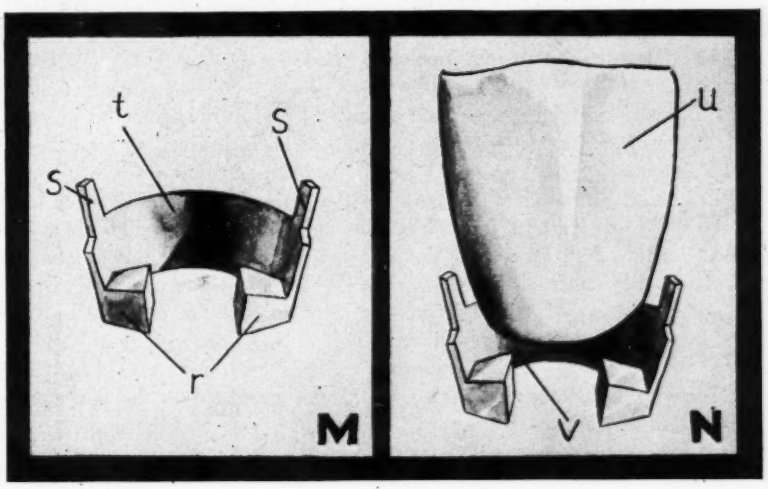
b) This groove is cut one millimeter deeper than in the posterior pontics and terminates short of the labial surface.

c) From the termination of this groove on either side, another groove of the same depth is cut on each side, mesiogingivally and distogingivally.

d) The area enclosed by these grooves is cut away with burs and chisels to the depth of the initial cut, a well-defined shoulder thus being formed on the lingual, mesial, and distal sides (o in Fig. J). (The area enclosed by the shoulder [m in Fig. J] presents a somewhat deeper boxing than the one formed in the posterior pontic. The limited area of the boxing is somewhat compensated for by its depth.)

e) The shoulder is now beveled and the prepared area is smoothed and polished.

2. Dovetailed Slot: The retentive aspect of the anterior pontics consists of a dovetailed slot on the mesiogingival and the distogingival sides, identical to the dovetailed slots described for the posterior teeth.



M. ***Inner view of gold backing: (r) dovetail blocks; (s) extension blocks; (t) inner surface.***

N. ***Labial view of pontic assembly showing relationship of pontic to backing: (u) labial view of central pontic; (v) inner view of gold backing.***

a) The preparation is the same as for the posterior teeth.

b) In order to give the pontic additional retention to prevent it from being dislodged during mastication, additional slots (q in Figs. K and L) are cut on the mesial and distal sides, midway between the labial and lingual surfaces and starting at the proximal shoulder in the incisal direction.

c) The depth of these slots is the same as the level of the boxing and a continuation of it.

d) The extent of the slots is one-sixteenth of an inch, and they must be parallel to each other.

e) It is best to undercut the labial and lingual sides of the slots. This may be accomplished by running a number 701 bur labially and lingually on the floor of the slots.

f) The area enclosed by the boxing is, as before, smoothed and polished.

Waxing and Casting the Gold Backing

Inasmuch as acrylic resin adheres to liquid wax, extreme care must be exercised to prevent such contact.

1. In order to wax up the acrylic pontic for the casting of a gold backing, a metallic matrix must be prepared to fit the pontic loosely.

2. The matrix is then lubricated and filled with softened inlay wax.

3. Next, the pontic is similarly lubricated and forced into the matrix, with its occlusal surface directed up, and then placed under compression.

4. When the wax has cooled, the metallic matrix is removed and the wax is trimmed to correspond with the outline of the natural tooth.

5. In the case of short bite teeth, an 18-gauge corrugated post is heated and inserted directly into the prepared hole of the waxed slot for the purpose of giving the tooth additional strength.

6. Only one sprue wire is attached to the center of the wax pattern on the lingual side.

7. In order to facilitate the removal of the wax pattern from the pontic, a drop of sticky wax is deposited upon the occlusal surface of the pontic and a match stick is then imbedded in it. With the match stick held in the fingers of one hand and the sprue wire in the other hand, gentle torsion is applied and the pattern is withdrawn from the pontic without distortion.

8. The wax pattern is then thoroughly soaped to remove any trace of the lubricating oil and invested in a heat expansion material.

9. The casting is done in extra hard gold; after it has cooled, the casting is recovered and boiled in nitric acid.

The individual gold backing is fitted to the pontic and properly finished. Care must be taken to see that the finished backing falls short of reaching the gingiva on the lingual side in order to eliminate the possibility of gold contact with the tissues.

Assembling Bridge

1. With the plaster alinement matrix as a guide, each individual pontic enclosed in its gold backing is placed in position on the original model.

2. Sticky wax is used to join the backings to the gold abutments.

3. The plaster alinement matrix is then removed, and the pontics are separated from their backings.

4. The bulk of the model is reduced; then the model is soaked in water to replace the moisture lost during crystallization.

5. It is invested in a good investment material, the entire bridge being covered with the exception of the waxed portions.

6. The soldering is done in the usual way, a high carat solder being used.

7. When sufficiently cooled, the bridge is recovered from the investment, pickled, finished, and polished.

The bridge is now ready for trial in the patient's mouth. When occlusion and alinement as well as gingival contact are found to be satisfactory, the bridge is removed from the abutment teeth, and the pontics are individually cemented to their respective backings. As a final step, the bridge is cemented to the abutment teeth.

Replacement of Pontics

The fact that the retentive dovetailed slots are located on the mesiogingival and distogingival parts of the posterior teeth and that there are additional proximal slots in the anterior teeth renders the pontic almost unbreakable. Should a fracture occur, however, replacement of any of the pontics offers little difficulty.

1. The cemented bridge does not have to be removed from the abutments; instead, the broken pontic is removed from its backing by means of a bur, traces of cement are dislodged, and the backing is washed and cleaned.

2. The backing is then lubricated and softened ivory wax is pushed into it, being held there with the thumb until it has hardened.

3. The occlusal part of the wax is softened with a hot wax spatula, and the patient is instructed to close in centric and move the jaws from side to side. The depressions formed in the occlusal wax by the occluding teeth will serve to guide the operator in carving the wax to proper occlusion.

4. The wax is trimmed and carved in the mouth to normal occlusion and proximal contact.

5. When trimming and carving are completed, the wax pontic is carefully removed from the backing, cleaned with soap, invested, and processed in a good acrylic according to shade.

6. When sufficiently cooled, the pontic is finished, polished, and fitted to the backing in the patient's mouth; then, finally, cemented.

Conclusions

The common fallacy of shade exhibited by some porcelain facings in artificial light is entirely eliminated in acrylic pontics. The gold backing of acrylic interchangeable teeth covers only the gingival third of the lingual surface, thus permitting light to pass through the middle and incisal thirds.

The necessity of discarding an otherwise successful fixed bridge because of a fractured pontic is obviated when interchangeable pontics are employed for they can easily be made retentive. Those dentists, especially, who do some of their own bridge restorations will find interchangeable acrylic teeth a boon to fixed bridge prosthesis.

378 *Kingston Avenue.*

The EDITOR'S *Page*

DENTISTS ARE expected to know more than they usually do know about medical and biologic subjects. Patients are prompt to mention their ailments to dentists with the expectation that they will receive intelligent understanding. Physicians expect us to know the principles of modern medical practice and to discuss the conditions of patients in these terms.

For our own enlightenment we can gain considerable knowledge from modern medical procedures that are applicable to dental practice. Dentists use the sulfonamides and newer antibiotics; dentists use the newer intravenous anesthetics such as sodium pentothal; dentists use the newer hemostatics such as fibrin foam and the cellulose absorbable dressings. All these agents were first used in general medicine and then adapted to use in dental practice.

Dentists are not expected to and do not wish to prescribe for or to treat general disease. But they must distinguish diseases of the mouth acting as focal sources of infection in other tissues from general diseases expressing themselves as lesions in the mouth. Dentists, in other words, must recognize whether a pathologic condition of the mouth is the source of a disease or the indirect expression of a disease.

The dentist who has not built his practice on the broad base of biologic awareness cannot diagnose or treat disease except with mechanical empiricism. That method is sure to fail precisely the same as the surgeon fails who lacks diagnostic acumen and places his reliance exclusively on his technical skills. The surgeon's lack is often dramatically demonstrated by the death of the patient. The dentist's is not demonstrated in such a conclusive manner. The surgeon perforce must *know* biologic and modern medical procedures; the dentist should at least be *aware* of them.

The literature of dentistry is extensive. It will take any dentist several evenings of careful reading each month to keep pace with the periodical writings and the new books. The literature of medicine and the biologic sciences is so great that it would require a full-time job even to skim the field of journals and books. It would be humanly impossible for one man to make a thorough monthly study of the field. But one man may do extensive reading in the biologic and medical subjects and pass his notes along to others. This is a form of authorship and readership that has been popular in the general literature. Ideally, of course, we should not depend upon "digests" for our information but should turn to the original sources of publication. From the practical side, however, this cannot be. There are so few free hours and so many demands on time that we cannot afford the hours of scholarship required even if we are so disposed.

To help bridge the gap between modern medical and biologic knowledge and the dentist, we are starting a new section in this issue, MEDICINE AND THE BIOLOGIC SCIENCES. This department is being published on an experimental basis to determine if dentists react favorably to this kind of material or to learn if they prefer this publication to concentrate on technical subjects. This department is being conducted by a special writer on assignment. The text for the new section will be of an easy and readable style, free from the ponderous tones of some scientific writing.

Readers are the sole judges of any publication. If you like the idea of this new department—or if you do not—we will be glad to hear from you.

MEDICINE
and the Biologic Sciences

Obesity

An increased incidence of cardiovascular disease associated with obesity has been noted. It seems logical to assume that since obesity requires an increase in metabolism to maintain itself, an increased cardiac output is necessary. And in the long run this constant additional strain certainly must be harmful.

Obese persons do not show a lower energy expenditure than normal persons of the same height, age and sex; on the contrary their total expenditure of energy is greater. Also, there is little evidence that obese persons have a more efficient digestive mechanism that enables them to extract from their food a higher percentage of nutrient material.

There is no scientific basis to the suggestion that adiposity is caused by a hereditary trait enabling the adipose cells to accumulate excessive amounts of fat and retain it despite starvation.

The accumulation of fat appears in most cases to be the result of an overall intake that has exceeded the total dissipation of energy by the body with the result that the excess energy has been stored in the form of fat. Fundamentally the fault seems to be an excessive desire for food.

Hoff, H. E.: Physiology, New England J. Med. 235:826-828 (*December*) 1946.

Congenital Syphilis

The presence of congenital syphilis is of interest to the dentist because of a trio of symptoms. When one is found the other two are usually present. These three symptoms are: Hutchinson's teeth, deafness of eighth nerve origin, and interstitial keratitis.

The teeth affected are the permanent incisors, canines, and first molars. Incisors when affected are peg-shaped and commonly notched. Molars have constricting cusps which give these teeth a mulberry shape. Molars thus affected are termed Pfluger's or mulberry molars.

Deciduous teeth are seldom affected and then only when dystrophy occurs at a very early age.

Robinson, H. B. G.: Clinic on Differential Diagnosis of Oral Lesions, Am. J. Orthodont. & Oral Surg. 32:732-733 (*December*) 1946.

Diabetes - Insulin

Insulin was discovered just a little over twenty-five years ago. It has become a blessing and an actual life saver to countless individuals. There are approximately one million diabetics, recognized and unrecognized, living in the United States today.

But still, according to Doctor Elliott B. Joslin of Boston, an outstanding authority on diabetes, there are many diabetics dying annually despite insulin and there is an actual increase in the number of diabetics.

The increasing number of diabetics is due to three factors: (1) the aging of the population as a whole, thus bringing more people into the period when diabetes is most common; (2) better recognition and care by the physician who today seeks out diabetics in routine practice; and (3) the three—to fourfold prolongation of life chiefly due to insulin and recently aided by sulfonamides and penicillin.

Stuart, C. K.: Thyrotoxicosis, Diabetes and Thiouracil, Canadian M. A. J. 55:150 (*August*) 1946.

Poliomyelitis

In a comprehensive report by Doctor E. M. Bridge in the November *Journal of Pediatrics* there is presented definite data concerning the existence of mild cases of "abortive poliomyelitis" which are impossible to distinguish clinically from infections due to common bacterial pathogens. Usually they pass as unexplained fevers, attacks of nausea and vomiting, respiratory infections, and "grippe." However, from such individuals the virus may be acquired with a resulting paralytic form of the disease.

It is important to make a special effort to recognize these mild cases. There are no simple laboratory aids for confirming the diagnosis on a large scale; therefore, accurate clinical observation is essential. In cases showing meningeal and paralytic symptoms and characteristic changes in the spinal fluid there is no doubt about the diagnosis. However, several cases of severe and even fatal poliomyelitis have been reported in which there were no changes in the spinal fluid.

The following symptoms either alone or in various combinations may result from an infection with the

virus of poliomyelitis: fever, nausea and less frequently vomiting, sore throat, nose cold, mild diarrhea and headache. These symptoms may be caused by other infections but the incubation period is almost always from one to three days while the incubation period of poliomyelitis is from one to three weeks.

It has been estimated that during an epidemic period there are from six to twenty illnesses of a mild nature caused by the virus for every individual diagnosed as having the disease.

Poliomyelitis infections are relatively more common in warm weather than in cold, a fact which is just the opposite from the seasonal periodicity of other common infections.

The disease affects all ages. However, the symptoms vary slightly. Fever is particularly common in children below the age of ten years, headache is common in the 10- to 40-year age group, and diarrhea is found in the older individuals. Nausea, vomiting, and sore throat affect all age groups in approximately the same proportion.

Bridge, E. M.: The Diagnosis of Abortive Poliomyelitis, J. Pediat. 29:597-608 (*November*) 1946.

Hemorrhage—Dicumarol

Few people die of hemorrhage but many persons die of blood clotting. Medical science has a potential weapon to combat this condition. It is a drug known as dicumarol which is produced from a substance present within spoiled sweet clover.

Five per cent of the middle aged and old persons who undergo surgery suffer in one degree or another from blood clotting. The process comes about when a blood vessel is injured. This injury may cause the formation of a thrombus. And from the thrombus parts may break off and circulate in the blood stream. Circulating parts are termed emboli. If they lodge in the arteries of the brain, apoplexy results. When an embolus lodges in the blood vessel of an extremity, amputation is frequently necessary.

Research over a period of twenty years at various centers, including the University of Wisconsin and the Mayo Clinic, has developed the use of dicumarol to a point where medical science has a potential preventive cure for certain types of strokes, heart attacks, apoplexy, and many other diseases caused by the clotting of blood.

The specific action of dicumarol is such that it causes hemorrhage. Its reaction varies in different people. Therefore, it should be administered only under strict professional supervision.

Rosenbloom, David; and Crane, J. J.: Dicumarol, J.A.M.A. 132:924-925 (*December* 14) 1946.

Eye Bank

The Eye Bank for Sight Restoration, Inc. was established in 1944 in New York City. It serves as a centralized agency where human eyes are salvaged, preserved, and distributed to physicians who perform the corneal grafting operation.

There are approximately ten thousand to fifteen thousand blind persons in the United States who need the "corneal grafting" operation. This operation is successful only when the rest of the eye and optic nerve are normal. The cornea is a thin film serving as a window for the eye. Because of its position it is subject to a number of diseases and injuries that may lead to partial or total blindness. When the cornea becomes scarred or cloudy, the function of the eye is impaired or lost.

At present there are two hundred and thirty-seven physicians in the United States qualified to participate in the program. They work in twenty-two hospitals in New York City and in fifty-six hospitals scattered throughout the nation.

It is possible to store corneal tissue taken from a living or dead person only three days at the present time. Therefore, transportation for incoming and outgoing eye material is made available by the Red Cross and the various air lines. Eyes are given prompt and careful examination and put under a twenty-four hour culture test. After the corneal tissue has been used the eye receives a pathologic examination, and the results are reported to the hospital or physician from whence the eye originated.

Consent must be secured from persons who are willing to have their corneal tissue used after death. And some states require that legal consent of the next of kin must be secured even though the deceased has given his consent in writing for the use of his eyes.

Scholarships and fellowships are being established in leading medical schools to train more men for this work. Also, the Eye Bank carries on an extensive educational program for the public. An educational kit may be secured by writing to the Eye Bank for Sight Restoration, Inc., 210 East 64th Street, New York 21.

Current Comment, The Eye Bank, J.A.M.A. 132:862-863 (*December* 7) 1946.

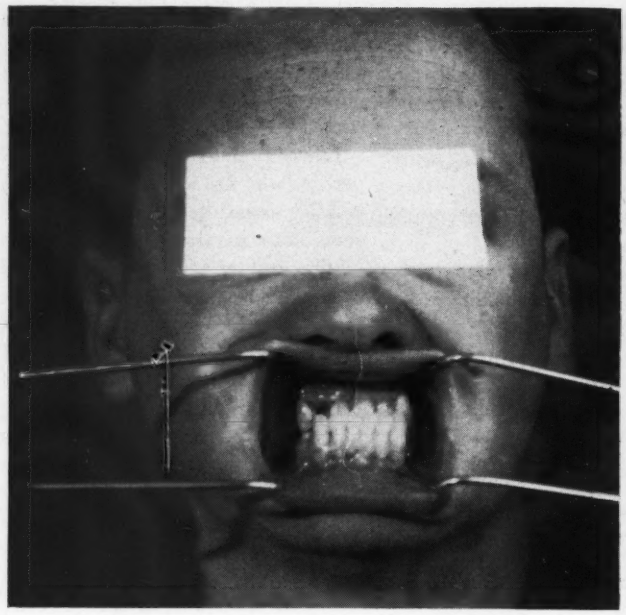
Epilepsy—Sodium Dilantin

Recent observations have revealed that fifty per cent of the patients receiving treatment for epilepsy in the form of sodium dilantin show gingival hyperplasia within one year. This hyperplasia varies from a slight to a massive type which may cover the entire crowns of the teeth. At present the true cause is unknown but poor oral hygiene certainly is an accelerating factor.

Enlargement first is noted in the interdental papillae and soon bridges the tissue between the individual papillae. Tissue is of fairly normal color, firm and with a somewhat thickened epithelium. The tissue is not sore or tender and neither does it bleed readily.

Under the microscope the tissue is composed of fairly dense fibrous connective tissue. Most cases can be controlled if careful and proper toothbrush stimulation is instituted before the connective tissue becomes too dense.

Robinson, H. B. G.: Clinic on Differential Diagnosis of Oral Lesions, Am. J. Orthodont. & Oral Surg. 32:744-745 (*December*) 1946.

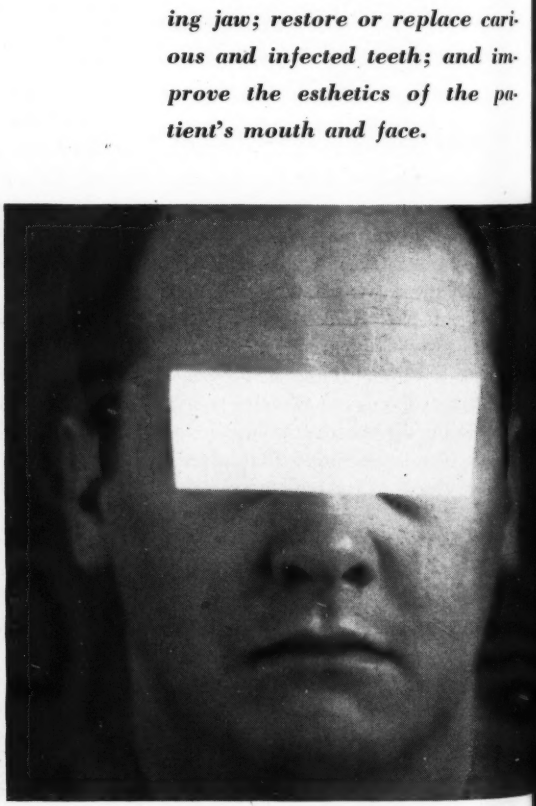


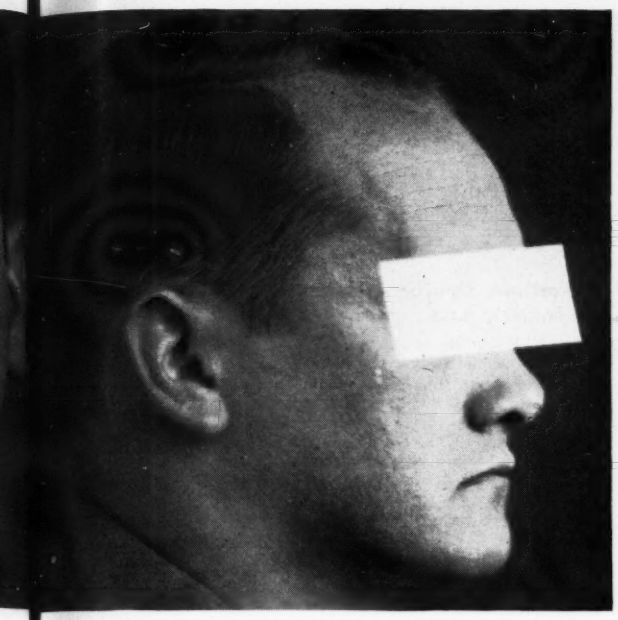
What Would You Have Done?

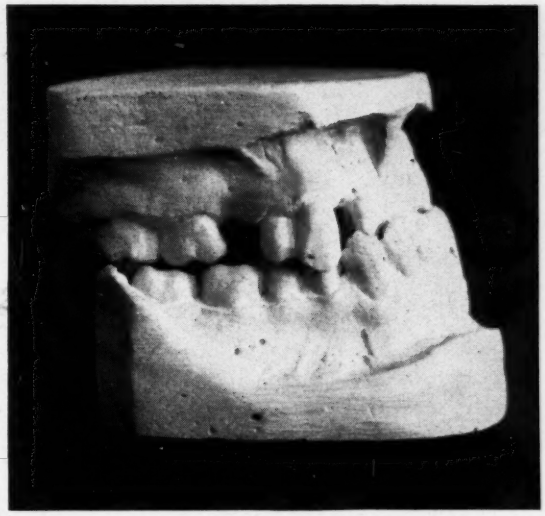
JACK F. CATHCART, D.D.S., Berkeley, California

DIGEST

A problem in mouth rehabilitation is presented involving the need to: correct severe malocclusion characterized by a protruding jaw; restore or replace carious and infected teeth; and improve the esthetics of the patient's mouth and face.







BEFORE TREATMENT

Models in centric relation

Case History

The patient, aged 23, was recently released from active army duty. Examination showed a severe prognathous malocclusion. The mouth drooped at the corners. Roentgenographic examination disclosed four infected teeth in the upper jaw and badly carious remaining teeth. The teeth of the lower jaw were in fairly good condition: six inlays were indicated.

Prognosis

1. Would the extraction of the infected upper teeth, the restoration of the remaining ones, and the construction of a partial denture to meet the existing condition of the lower jaw be best for the patient? Or,

2. Would it be better to extract all of the upper teeth and make a full upper denture to create a normal occlusion and pleasing cosmetic effect?

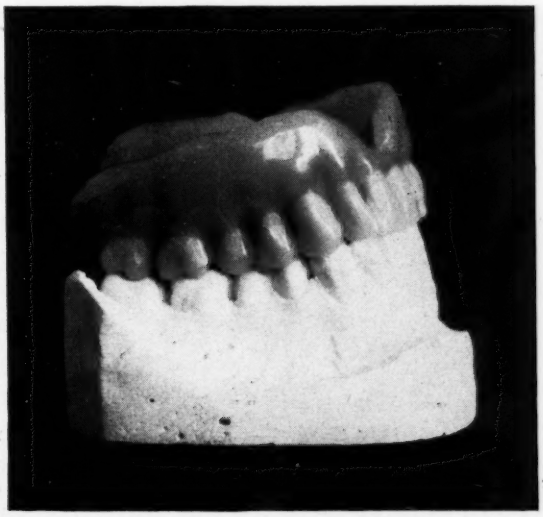
Diagnosis

I removed all of the upper teeth and restored them with a full upper denture. Six inlays were placed in the lower teeth. Photographs show the completed prosthetic treatment.

Comment

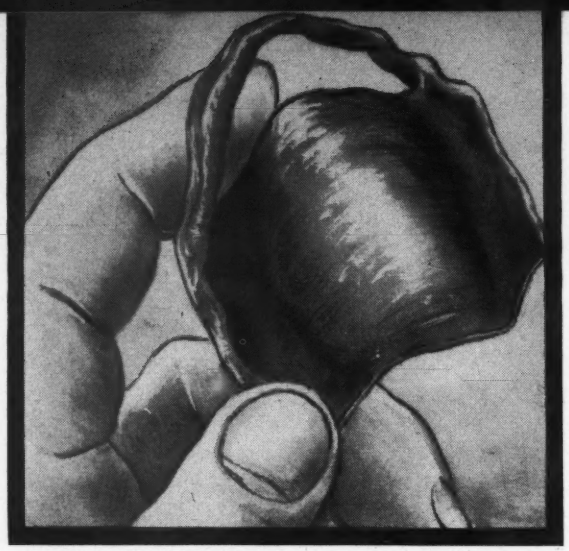
What would you have done?

701 *American Trust Building.*



AFTER TREATMENT

Models in centric relation



Clinical and Laborator

Immediate Denture Procedure

A. B. Gardner, D.D.S., Garden City, Kansas

Fig. 1—Using the model on which the immediate denture is to be constructed, adapt a baseplate after the teeth have been removed from the model. Cut out the baseplate in the area where teeth are to be extracted. After the anterior teeth have been extracted, insert the cut-out baseplate and trim the tissues even with the cut-out edges. Insert the denture. This method will produce a better fit of the immediate replacement.

Sterilizing Container for Anesthetic Tubes

Thomas R. Wright, D.D.S., Chicago

Fig. 2—Fit a piece of rubber dam over the mouth of a jar. Using a rubber dam punch, make holes in the dam. Screw the cover in position. The dam prevents evaporation of the sterilizing solution by its snug fit around the tubes. The carpules are quickly and easily removed and replaced by others in the sterilizing solution. The close fit of the rubber around the tubes prevents contamination of the solution.

A Lead-Lined Film Safe

S. J. Fanale, D.D.S., Hasbrouck Heights, New Jersey

Fig. 3—A suitable chest or cabinet is lined with lead sheeting $\frac{1}{32}$ to $\frac{1}{16}$ inch thick. The lead is adapted to all the inner dimensions of the box and held in place with small nails or thumb tacks.

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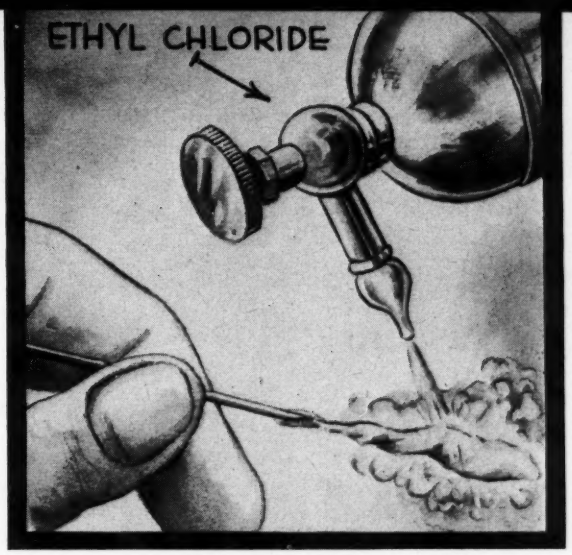
...GGESTIONS . . .

A Pulp-testing Instrument

J. Campbell Thompson, D.M.D., Boston

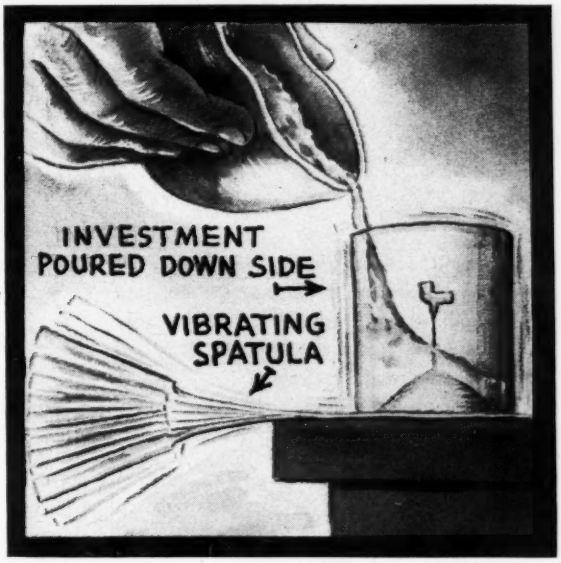
Fig. 4—Often it is desirable to have a piece of ice for pulp testing. Few dental offices have ice available. For a substitute, use a piece of cotton on an applicator. Spray it with ethyl chloride until it is well frosted and resembles a piece of ice. Then make the cold test on the tooth.



Investing Inlays

H. G. Barrer, D.D.S., Reading, Pennsylvania

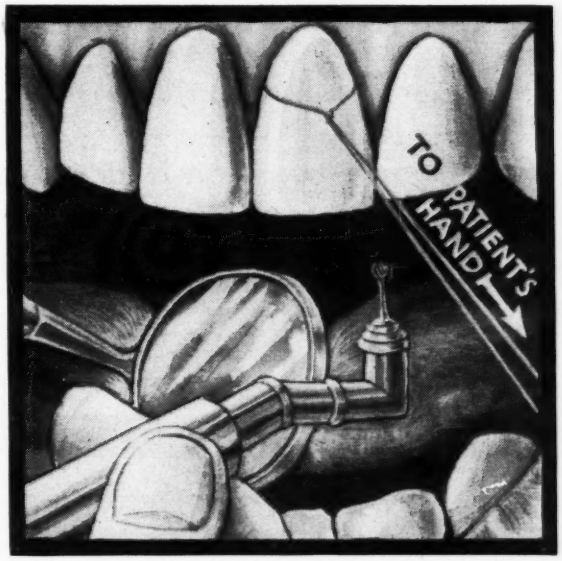
Fig. 5—A simple vibrator is made by placing the blade of a plaster spatula under the base of the inlay sprue former. When investment is being poured into the ring, set the spatula in vibration. This gentle jarring of the base and ring ensures a dense, bubble-free investment.



Opening into a Sensitive or Inflamed Tooth

William H. Weston, D.D.S., Nashua, New Hampshire

Fig. 6—Use a piece of regular unwaxed sewing silk, size F.F., and tie it tightly using a square knot about the tooth at the cervical margin. Let the ends of the silk hang free about a foot from the tooth. Tie the ends together and have the patient insert his thumb in the loop. As pressure is used when opening into a sensitive or inflamed tooth, instruct the patient to exert counter force by a pull on the silk. Pain can be largely controlled with this procedure.



suitable illustrations; write a brief description of the technique involved; and jot down the advantages of the technique. This shouldn't take ten minutes of your time.

Turn to page 145 for a convenient form to use.

Send your ideas to: Clinical and Laboratory Suggestions Editor, DENTAL DIGEST, 708 Church Street, Evanston, Illinois.

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Contra-Angles

Chicago Midwinter Highlights . . .

The life of a reporter at a dental convention in Chicago is an easy one. Through the good offices of Mr. Julian J. Jackson, Public Relations Counselor, newspaper reporters are supplied with advance digests of every paper presented before the Midwinter Meeting. These same digests are helpful to us reporting the meeting in the professional literature.

Every year dental societies get better in their public relations. The American Dental Association has recently engaged a press relations director, a former newspaper man, Mr. Herbert Bain, who is doing a remarkably fine job in helping press chairmen of component dental societies with their work. Mr. Bain is sent out by the Bureau of Public Relations of the American Dental Association to attend most of the large meetings throughout the country. His experience and skill in handling stories and newspaper men are reflected in the excellent dental publicity appearing throughout the country.

Here are some of the subjects that were of particular interest at the Chicago meeting:

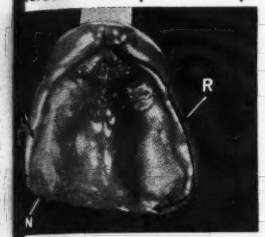
Full and Partial Denture Prosthesis

"Patients who are about to receive dentures usually have incisal wear, fillings, stains, and other imperfections. It is up to the dentist and the patient to decide whether any or all of these imperfections should be copied and to what extent," said Carl W. Gieler of Chicago.

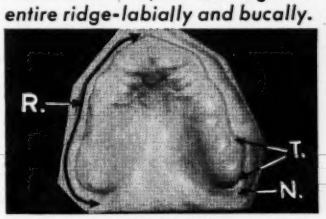
"Irregularity in alinement and position may be attained by spacing, crowding, lapping and rotating, varying the inclinations, and by shortening or elongating the teeth. While

JUSTI RESEARCH Suggests:

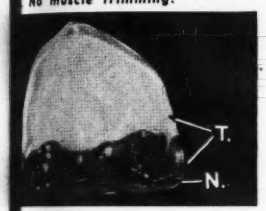
Positive retention may be obtained in upper dentures using the Muco-Seal Technique. The important areas are: **T**-*Full tuberosity area;* **N**-*Hamular Notch;* **R**-*Full height of entire ridge-labially and bucally.*



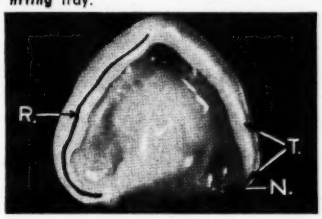
overextended modeling compound sion. Make certain all areas are in- **No muscle trimming.**



2) Preliminary model outlined for **loose fitting** tray.



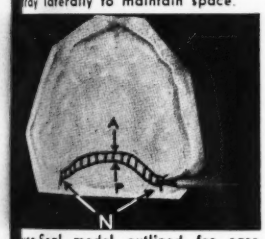
ened stick compound is placed on or border of tray, including the ity region. Place in mouth and ray laterally to maintain space.



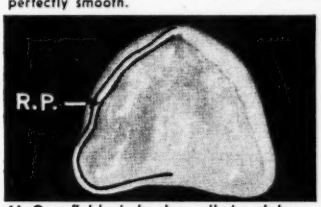
4) Mix Muco-Seal and place in tray. Preform Muco-Seal over peripheral edges and place in position in the mouth. Make certain tray is seated. A smooth roll should be apparent on all peripheral borders.

• • •

Apply Muco-Seal Glaze and wait three minutes. Then re-seat impression in mouth for 30 seconds. Impression should now be perfectly smooth.



uco-Seal model outlined for case or post-dam. Note that post-dam only from notch to notch. Post- s necessary and should assume a curve 1½ mm. deep and 4 mm. The cut will start on the model at end on the periphery at P.



6) Case finished showing rolled periphery. **R. P.** Rolled periphery continuous with post-dam.

Write for complete technique.

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Positive retention in full dentures is maintained through the useful life of the dentures **only** if teeth are used that will maintain balanced occlusion and minimize alveolar absorption.

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After deflasking and removal of the flash, the upper is surveyed by holding the pencil horizontally and allowing it to mark the highest part of the periphery, buccally and labially. The denture is then trimmed back to this line and rounded into an approximate one-eighth inch roll.

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these irregularities may be duplicated to an exacting degree, it is not always desirable to do so, inasmuch as some of these irregularities may be quite displeasing. Furthermore, the patient's desires must be considered. Some patients have a definite dislike for anything but beautiful teeth, while others may be insistent on a faithful reproduction of their own natural teeth. Most individuals will take an intermediate stand and will, to a great extent, depend on the dentist for his advice."

Age, skin color, cosmetics, and even the time of the day and the weather play a part in the selection of teeth for the patient requiring a full denture, according to E. Bruce Clark of Pittsburgh. He outlined extensive experiments he undertook to classify tooth colors. After classifying approximately 5,000 teeth, he found that teeth fall into six groups based upon degree of brilliance: Group one, those with the brightest teeth, are 20 years old or less; group two, 20 to 30 years; group three, 30 to 45; group four, 45 to 60; group five, 60 to 70; and group six, patients seventy and over. Within each group may be several variations of shade.

"The harmony between skin and tooth color must be decided by the dentist and should be done in daylight," Doctor Clark said, "preferably after ten o'clock in the morning and before two o'clock in the afternoon. Light from white clouds or from an overcast sky is preferable to that from a blue sky. Women, at such a time, will be using the proper daytime cosmetics. The cosmetics should not be removed. If the teeth are in harmony with the skin in daylight, they will also appear in harmony under artificial light at night. Tooth color selection should not be made under artificial light if it can be avoided."

Arthur L. Roberts of Aurora, Illinois, warned dentists that they cannot rejuvenate an aging patient's face no matter what technique they use when they fit full dentures. "Impelled by a desire to make the lower third of a patient's face appear fifteen or twenty years younger than the rest of the entire body," he declared, "many dentists 'open the bite' with

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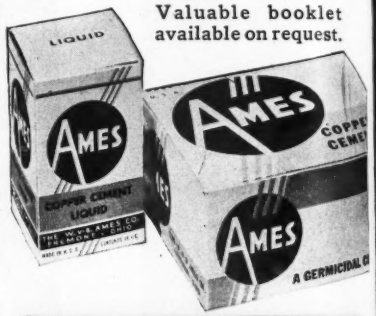

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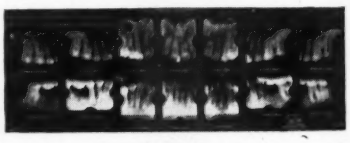

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the idea that by so doing the facial wrinkles of the patient will be stretched out.

"Thompson has proven that, if by means of prosthetic restoration, the vertical dimension is increased beyond normal for an individual, biologic forces will return the mandible to its correct former position by resorption of the alveolar ridges. Incorrect vertical dimension is the cause of more uncontrolled ridge resorption and more so-called 'settling out of balance' of dentures than any other one error."

In discussing SOME NEGLECTED ESSENTIALS FOR REMOVABLE PARTIAL DENTURE FUNCTION, Victor L. Steffel of Columbus, Ohio, said that "the removable partial denture phase of dentistry suffers the shameful distinction of being the most neglected and most abused of all dentistry's sub-divisions." Those of us who would avoid failure, he said, must "constantly remind ourselves that, in our enthusiasm, we should not promise the impossible. . . . If the problems to be met in design and treatment were wholly mechanical, a complete restoration of function might be predicted. But the mechanical phases must be subordinated to the biologic. The success of a case is largely dependent upon biologic response.

"Every application of a mechanical principle must be made with sane judgment with reference to the ability of the various living tissues to accept the movement and stresses imposed on them. Proper design and adequate support, therefore, are of prime importance—much more critical to partial denture function and success than the specific materials of which partials are made." Doctor Steffel cited some of the "sins of omission" leading to unsatisfactory removable partial dentures: lack of careful diagnosis due to the failure to use study models and well-defined roentgenographs; failure to survey and design cases before having them fabricated by the technicians; neglect of application of fundamental principles of leverage in design; improper distribution and reduction of destructive

CLINICAL AND LABORATORY SUGGESTIONS

(*See pages* 140 *and* 141)

Form to be Used by Contributors

To: Clinical and Laboratory Suggestions Editor
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708 Church Street
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From:_____

_____

Subject:_____

Explanation of Procedure:

Sketch:

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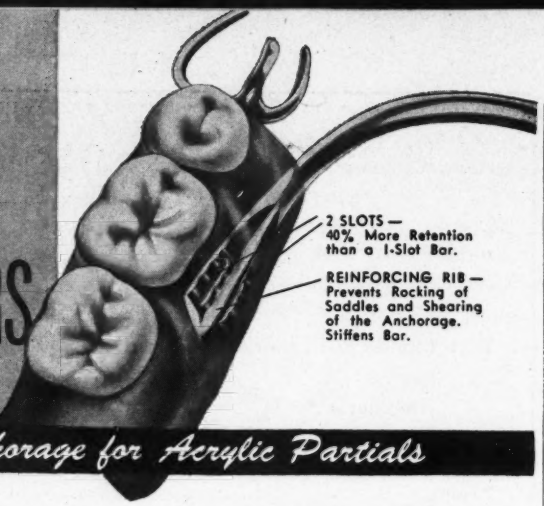
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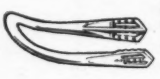

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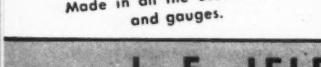

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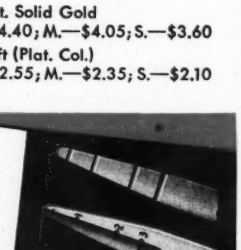

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forces, to convert them for physiologic stimulation; indifference to centric relation; assumption that the patient knows fully how to use and care for dentures.

Oral Diseases

The loss of teeth because of periodontal diseases can be prevented inasmuch as "periodontal disease can be cured," according to Sidney Sorrin of New York City. "Successful results are dependent upon understanding the primary principles of treatment. These include: 1) study of the tissues involved; 2) diagnosis, including laboratory tests and prognosis; 3) removal of all etiologic factors; 4) remedying the condition and removing effects of disease by either scientific instrumentalities or surgery; 5) raising of tissue resistance by teaching proper methods of gingival stimulation, mouth care, and diet."

Pointing out that "the assertion that the disease is curable may arouse severe criticism," Doctor Sorrin defined his use of the word "cure" in such cases as meaning that the teeth become firm and useful and that the periodontal tissues become firm, resistant to infection and of normal color, with elimination of abnormal conditions such as pus, bleeding, and pockets.

Discussing TREATMENT OF PERIODONTAL INVOLVEMENTS, Howard A. Hartman of Cleveland pointed out that Sir William Osler, the father of modern medicine, years ago recognized the significance of healthy oral structures when he said: "There is not one thing in preventive

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medicine that equals in importance mouth hygiene and the preservation of the teeth.

"In order to diagnose and treat periodontal disease," Doctor Hartman reminded dentists, "the lesions must be differentiated and, if possible, the etiologic factors involved definitely determined. Symptomatic treatment of periodontal disease is of limited value. If the etiologic and predisposing factors are not eliminated at the time of symptomatic treatment, there will be a recurrence of the particular involvement."

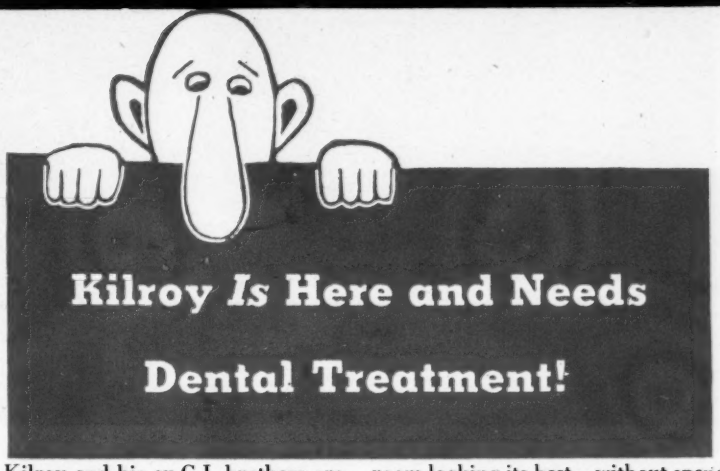
In a paper, LESIONS OF THE SOFT AND BONY TISSUES ABOUT THE MOUTH, Doctor George W. Christiansen of Detroit said that, "Early and easily observed signs of local and system disease are found [in the oral cavity], and their discovery in nascent form can be the means of simple treatment and quick recovery. Only by recognizing and recording such findings can the dental practitioner justify his enviable position in the healing art . . . . The value of recognizing variations [in oral tissue changes] is great, and dental practitioners need this ability."

Pedodontics

G. A. C. Jennings of Richmond, Virginia, in a paper entitled MANAGEMENT OF A PEDODONTIC PRACTICE, urged the establishment of dental practices exclusively for children in communities where such a practice could be supported financially. ". . . approximately two hours per year, per patient, will keep a child dentally fit," he said. "To render the necessary dental service to children in my practice—that is, patients under 15 years of age—it requires on the average of three and one-quarter visits per year. Appointments are made for varying periods of time, but over a five-year period of statistical data, the average appointment time is 37 minutes."

Doctor Jennings maintained that "The first step in the successful management of children in a dental practice is to establish confidence" and that the best way to do this was to be "honest, truthful, and businesslike.

In your ORAL HYGIENE this month



Kilroy and his ex-G.I. brothers are going to have a great deal of dental work done at Government expense. William J. Walker explains how civilian dentists are to work with the Veterans Administration in giving ex-servicemen the dental treatment to which they're entitled. If you expect to work on Kilroy, you'll want to read this article.

★ ★ ★

"The Dentist's Duty to Refer Patients to Other Practitioners"—"It takes at least a modicum of courage for one to admit inefficiency or unpreparedness with respect to a science which he professes to practice," says Renzo Dee Bowers, LL.B., "But it is the part of wisdom, from a legal point of view, to make the admission and to advise a patient to obtain the services of some other practitioner whenever conditions reasonably require it." His article is replete with interesting examples of dental damage suits.

★ ★ ★

"Here are More Dental Patients"—Doctor Saul M. Gale suggests ways in which the dental profession may keep pace with swiftly changing socioeconomic conditions. He discusses the shortage of dentists, the improper geographic distribution of dentists, reciprocity of licensing, and the people's lack of dental care, and gives detailed suggestions for correcting these conditions.

★ ★ ★

Is your reception room working for or against you? Though you may protest that decoration has nothing to do with the quality of dentistry, the fact remains that patients do sometimes judge your ability by your surroundings. Ralph D. Wheeler, of the American Institute of Decorators, tells how any dentist may keep his reception room looking its best—without spending a great deal of money.

★ ★ ★

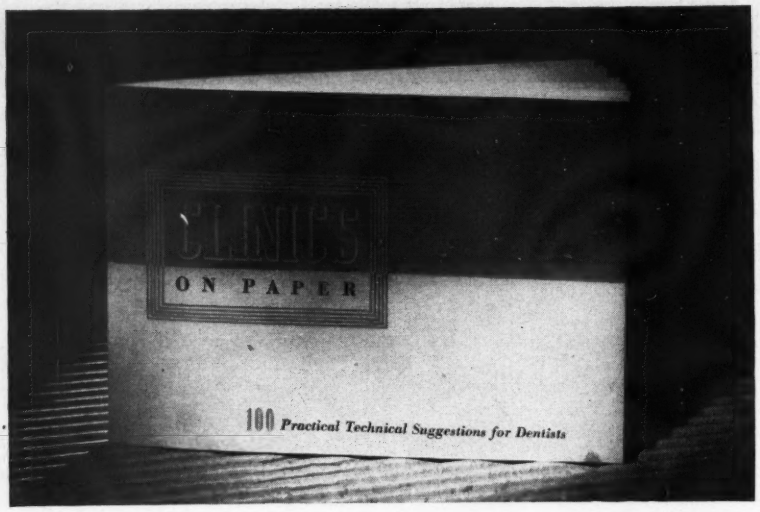
"Headaches—Their Neurosurgical Aspect," by Doctor Roland M. Klemme, is an article which should be of interest to every dentist. Doctor Klemme is Professor of Surgery in the Section on Neurological Surgery at St. Louis University. He describes many different types of headache and the pathological conditions of which they are a symptom.

★ ★ ★

When you send a case to the laboratory, do you give careful instructions as to design and materials? Do you send perfect impressions—and counter impressions showing occlusal relationship? Do you choose your laboratory on the basis of quality—not price? Do you allow sufficient time to complete the appliance without rushing? . . . If not, perhaps it will pay you to read the short, helpful article, "Getting the Most Out of the Dental Laboratory."

★ ★ ★

"Is National Reciprocity Possible?"—Doctor C. L. Meistroff offers a specific workable plan for national reciprocal dental licensure. He suggests that school curriculums and state board examinations should be standardized so that tests, both practical and theoretic, bear some resemblance to the profession as it is practiced today and to what is taught in the undergraduate years. His plan would give the graduate an opportunity to practice for a year in a county dental clinic and to use this service as either part or all of his practical board examination. Doctor Meistroff's plan is practical, logical, and workable. It is worthy of very serious consideration.



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Each of the 100 suggestions is skillfully illustrated. Explanatory text is kept to a minimum. Volume Two is carefully indexed and colored tabs designate various subject matters.

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Gentlemen:—
Inclosed find check for a copy of Clinics on paper which you will please send to the inclosed address with my compliments.
It's too bad every dentist does not know of this clever helpful publication. Many thanks
Resp. yours,
[redacted]

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Dr. .....

Address .....

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. . . The child is primarily interested in what you are going to do, how you are going to do it, and when. So be patient with him and explain what it is all about."

Stewart A. MacGregor of Toronto, Canada, one of Canada's leading children's dentists and a member of the faculty at the University of Toronto, declared: "I feel that there is no justification for anyone making the subject of dentistry for children spectacular and difficult. Practice for children as you would for adults, realizing of course, that the business-like attitude you take with children must suit the age level. If you take this attitude with children on first meeting them and gradually get around to a more friendly, playful attitude, it has been my experience that you will maintain better control over the child for he knows that you can change to a firm approach at any time. . . . a small percentage of children do present a big problem, and it has been my experience to observe in all these cases that the parents are the real difficulty.

"When parents get provoked with me, which they often do, I show them that it doesn't upset me in the least. Then as time goes on, I mix a little element of friendliness with the firmness and, like the child, they come around and are your best boosters." Doctor MacGregor advocated a "middle road approach. . . . to show kindness but also to portray to the child by a businesslike attitude that misbehavior will not be tolerated."

F. Copeland Sheldon, prominent orthodontist of Kansas City, expres-

(*Continued on page* 154)

IS YOUR WORK HINDERED BY DERMATITIS?

Procaine Dermatitis *can* be treated successfully!

Seven years of clinical experimentation by Dr. Ernest Fowler with the assistance of physicians, dentists, and chemists, has produced a remarkably successful treatment.

Many letters in our files from dentists all over the country, testify to the efficacy of Fowler's Compound. One case of 20 years' standing responded to this treatment. Results indicate equal effectiveness in the treatment of Athlete's Foot and other externally caused conditions.

Fowler's Compound 1¼ ounce—$1.00
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At your druggist, or write direct

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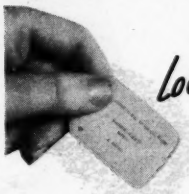

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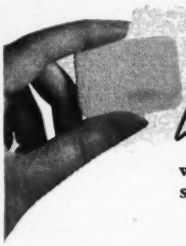
Smooth surface with printed placement directions. Easy to open . . . lift tab at either end and packet opens like a book.



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Curved corners and rounded edges for greater mouth comfort.

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Convincing evidence—isn't it—of how Kodak's outstanding technical experience is employed to assure you the best in dental radiographic materials.

Specify "Kodak" to your dental dealer

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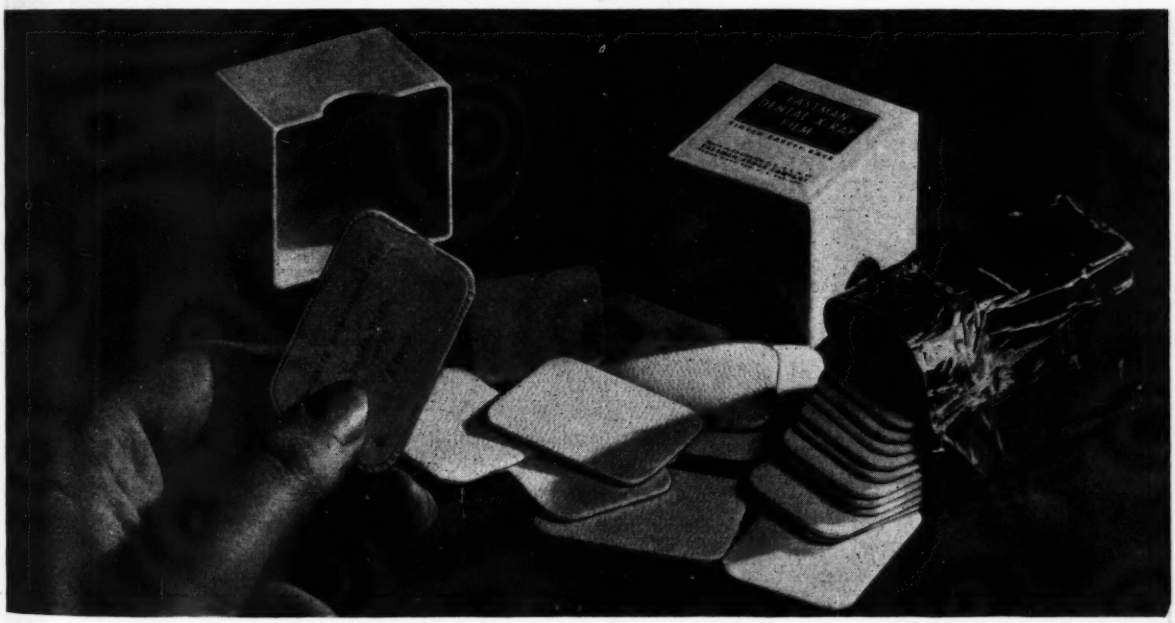

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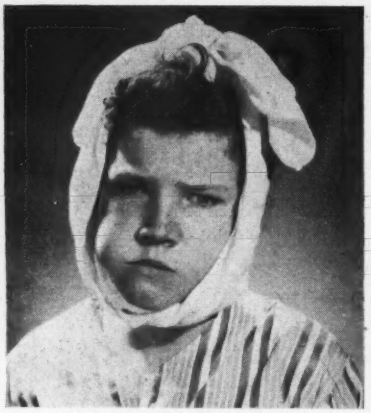
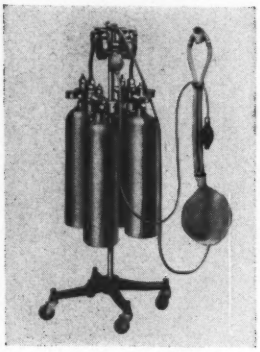


"Mom was right, but—"

And the *but* is that he didn't like dentists. Mom was right: she urged him to see his dentist long before his present condition developed, but his previous dental chair experiences had left upon his mind an impress of pain and discomfiture. He is not likely to become a good dental patient until these impressions are changed.

By controlling operative pain, McKesson nitrous oxide analgesia eliminates the fear that keeps people out of dental offices. By making dental treatments easier, McKesson pain control makes dental appointments easier.



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Acralain is made by one of America's largest manufacturers of dental acrylics. We suggest that you order one of the economy-priced units described below.

Acralain Cabinet Package

Includes 12 cabinet size units of powder (one of each shade), 3 bottles of *Acralain* liquid, 2 bottles of *Acracote* (coating medium), 2 mixing jars, 2 droppers, description of controlled pressure casting technique, description of alternative split flask technique. Packed in beautiful wooden cabinet.

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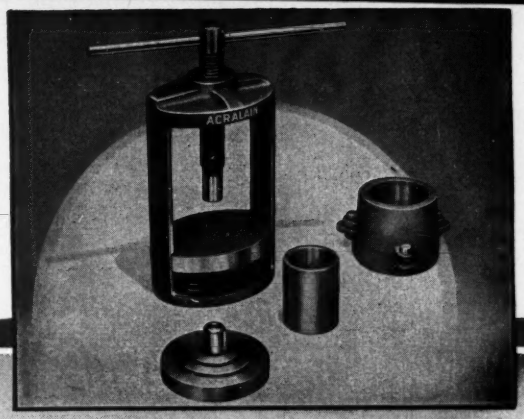
Premixed *Acralain* to match New Hue, Verichrome or Myerson Color Guides. Available in 5 assortments: 1. New Hue (12 shades); 2. Myerson (12 shades); 3. Verichrome (12 body shades); 4. Verichrome (12 incisal shades); 5 Verichrome (6 body shades; 6 incisal shades). Each assortment includes liquid, *Acracote* and 2 droppers.

Price of any assortment—$15.50

(*Continued from page* 148)

ed this opinion: "Granted that there is such a thing as type, there is no justification for creating an orthodontic type by protruding teeth which in turn protrude lips, in an endeavor to create alinement of the full complement of teeth if this is necessary. Also, there is justification for improving on type if the case has possibilities which will allow this to be accomplished." Doctor Sheldon addressed this plea to those who are undertaking the orthodontic correction of dental deformities: ". . . give close consideration to the face. This will necessitate a fairly comprehensive knowledge of the way in which it grows and develops, and an understanding of what is considered a good developmental level."

Speaking on the subject TRAUMATIZED ANTERIOR TEETH OF CHILDREN, Roy G. Ellis, Toronto, said that the anterior teeth are indirectly vital to the psychologic well-being of the individual, that "Disfiguring dental anomalies in the anterior region of the mouth have been responsible for the development of



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Our research department will be glad to send reprints of articles and clinical reports on the use of *Acralain* for inlays, crowns, bridges and other restorations, as well as detailed information on the advantages of *Acralain's* exclusive controlled pressure casting technique. Send your request to the address below.

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complexes, the full implications of which cannot be measured in terms of teeth alone."

Miscellaneous

S. Marshall Weaver of Cleveland, basing his remarks on 47 years of dental practice, declared that "The desirability of retaining a tooth if it can be rendered sterile, is unquestionable," that "Unfortunately, there are men in both medical and dental professions who believe that no teeth can be rendered permanently sterile, and advise radical extraction," but "To offset this, we see thousands of cases of pulpless teeth that have given good service for many years, without any harm to the patient and from roentgenographic evidence perfectly normal. . . . The problem therefore resolves itself in the ability of the dentist to sterilize the infected tooth, the periapical tissue, and to fill the canals with suitable material."

In discussing the use of hydrocolloid, E. Frank Inskipp of San Francisco pointed out that the material is "comparatively easy to use" but is "very delicate and has certain

AMMONIACAL SILVER NITRATE and FORMALIN
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A small unit to meet the requirements for using Ammoniacal Silver Nitrate and Formalin.

An economical and safe means of application. Lustrous bakelite container at no extra charge.

Contents: *Ammoniacal Silver Nitrate and Formalin*
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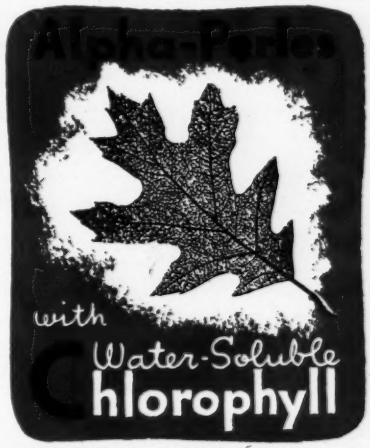

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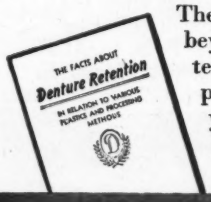
THE 'CURE' IS THE *Cause* OF YOUR DENTURE 'HEADACHES'

Progress nearly always begets new problems. Few patients today would be content with dull, unlifelike vulcanite dentures, nor would dentists willingly recommend them. Yet . . .

Why can't modern plastic dentures be made to provide equally good adaptation and retention?

They can—but not by conventional methods of processing. Rubber "stays put" when vulcanized or "cured" into form; acrylic and its co-polymers do not. Curing strains are set up in curved areas; the inevitable result is *warpage.*

No way has been found to prevent molecular strains in curing acrylics. But there *is* a way to minimize denture warpage by eliminating any "curing" action in the molding of a case.



The soundness of this method has been proved beyond question—not only in scientific laboratory tests, but in thousands of practical cases during the past seven years. It is explained in a booklet which you can have for the asking; send for it now and be convinced.

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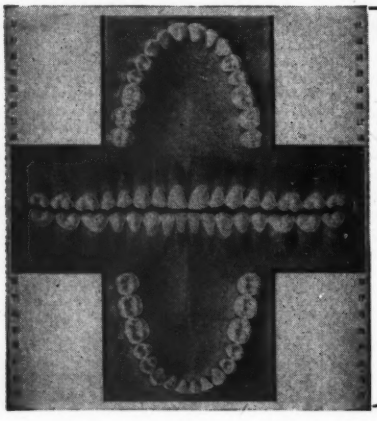

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properties which must be remembered. . . . Its water content is high and it can and does lose this moisture and regain it easily. In doing so, its bulk is affected. For example, if humidity is less than 100 per cent, it will lose water and contract; if placed in solution, it will absorb more and expand."

In experiments conducted with rats at the Naval Medical Research Institute, reported Commander Carl A. Schlack (DC) USN, Bethesda, Maryland, oxalic acid was added to acid beverages known to cause dissolution of rats' enamel. "Oxalic acid seemed to protect the teeth against such destructive effect [etching of the enamel] by virtue of the amount of deposit upon the teeth. When the deposit was scraped off, the underlying enamel appeared normal. Consequently, it was conjectured that the oxalate ions combined with the calcium ion in the food or saliva and produced an insoluble calcium oxalate which was deposited upon the molars." He emphasized that "caution must be exercised in concluding that any result obtained in this work is similar to that which might be expected in human dental caries." However, inasmuch as the dental deposits of rats resemble human calculus on close examination, he inferred that "the dietary oxalates [such as those in spinach and rhubarb] may be a factor in deposition of human dental calculus."

In connection with the readjustment of veterans to civilian practice, Donald H. Miller of Elmira, New York, asked: "May I suggest to you that it is not only proper but imperative that the older practitioners in any community seek out the new group just beginning practice? . . . . Wouldn't it be far better [than younger men developing friendships for and accepting guidance individually from older men] if the local dental society sponsored and directed a short course in practice management for the new men? . . . . Certainly, no one can deny the immense value of the good will that would develop as the result of such an undertaking."—E.J.R.